Evaluation of Short-Term Transportation Demand Management Strategies

final report

prepared for

Wisconsin Department of Transportation

prepared by

Cambridge Systematics, Inc.

December 2002

final report

Evaluation of Short-Term Transportation Demand Management Strategies

prepared for

Wisconsin Department of Transportation

prepared by

Cambridge Systematics, Inc.
150 CambridgePark Drive, Suite 4000
Cambridge, Massachusetts 02140

December 2002

Table of Contents

List of Tables

List of Figures

Executive Summary

This study of subsidized transit passes, pre-tax transit benefits and parking cash-out programs in Wisconsin concluded that:

- Existing transit benefit programs have a positive, if small, impact on vehicle-miles traveled (VMT) and air quality.
- Substantial increases in transit benefits program participation would result in greater impacts, but these impacts would still represent only a small fraction of total vehicle-travel and emissions.
- Improvements in the programs themselves are unlikely to result in major gains in ridership because the cost of transit to the rider is a relatively insignificant factor, compared with transit service levels and development patterns, in the decision to use transit.
- Participation in transit benefit programs could probably be cost-effectively increased by increasing the level of resources devoted to marketing programs at larger transit agencies.
- Since the cost of using transit is a relatively insignificant factor for most riders, other ways of decreasing single-occupancy vehicle use may result in greater overall impacts. These include improving transit speed, frequency, and rider comfort in vehicles and at boarding points, and promoting more compact and concentrated development.

Transportation Demand Management (TDM) measures seek to reduce single-occupant vehicle (SOV) automobile use through incentives, disincentives, and market forces that shift travel toward non-motorized or higher-occupancy transportation modes, reduce or eliminate the need to travel, and/or shift travel to less congested routes or times of day. In support of these measures, recent changes in the Internal Revenue Code [26 USC 132 (f)] permit employers to offer employees a tax-free benefit for commuting to work by methods other than driving alone. The Wisconsin Department of Transportation (WisDOT) conducted this study of the potential costs and benefits of three types of employer-based TDM incentive measures: parking cash-out programs, subsidized transit passes, and pre-tax transit benefits.

The study included three phases. In the first phase, a literature review was conducted to capture both the national experience and the State's experience with TDM strategies. The second phase was an analysis of how these TDM strategies, if implemented in addition to existing programs, could impact mode shares and work-related VMT in various Wisconsin markets and on a statewide level. An examination of the potential costs to administer the programs also was conducted. The third phase entailed interviews with Madison and Milwaukee employers that were cited by the transit agencies as having either already initiated a TDM program or being a good candidate for participating in a

TDM program. Interview findings and findings from previous phases were synthesized to formulate four policy options to increase program participation, increase transit use, and discourage SOV use in Wisconsin.

National Experience

An evaluation of the national experience with the three employer-based TDMs found that transit subsidy and pre-tax transit benefit programs were implemented more frequently and more successfully than parking cash out programs. Generally, transit subsidy and pre-tax transit benefits programs are organized and implemented by regional transportation authorities or local transit agencies, who recruit employers to offer transit passes or transit vouchers to their employees at subsidized or pre-tax levels. Typical hindrances to recruiting participation in these programs include: the administrative effort required to establish a program, the lack of major cost incentive to the employer, the lack of understanding of how tax incentives apply to the employer, and equity issues when the employer has multiple worksites with varying accessibility to transit.

Various strategies have been developed to address these barriers. A number of transit agencies offer fare discounts to companies' employees. Agencies also have made concerted efforts to market the programs by having face-to-face meetings with potential participants, providing companies with education and marketing materials, and offering supporting services such as a guaranteed ride home program.

Parking cash-out is a TDM strategy for employers that either subsidize or provide free parking to employees. In such a scenario, an employer offers the employee a monthly cash benefit in exchange for the employee's parking privileges. Although parking cash-out is a simple concept and relatively easy to administer, there is resistance to such programs because willingness to participate depends on the availability of viable alternatives to driving alone and on opportunity costs for the employer. Also, it challenges how society has priced parking for many years. Employers have traditionally provided free parking to their employees and, consequently, employees have come to perceive parking as an "embedded" benefit. To date, parking cash-out programs have been largely successful only in California where they were mandated by the State.

Overall, the research for this project found that TDM strategies are most effective in central business districts (CBD) and other high-density centers. Most successful TDM programs are multi-faceted, encompassing both transit incentives and SOV disincentives, as well as supporting services such as vanpool and ridematch programs. Marketing and education initiatives were found to be very effective in gaining program participation, particularly when the recruiting agency was able to share the experience of other participating companies. Public agencies have set an example to private companies by implementing TDM programs for their own employees.

Analysis of Benefits

The study's VMT-benefit analysis examined five Wisconsin markets: the Milwaukee CBD, the rest of Milwaukee County, the Madison CBD, the rest of Dane County, and smaller cities that have transit service. The U.S. EPA Commuter Model was used to forecast changes in mode share for the journey-to-work, work-related vehicle-trips, and work-related VMT as a result of introducing a new TDM program or a combination of new TDM programs to each market. These forecast impacts are in addition to the benefits of existing participation in programs offered by transit agencies in Milwaukee and Madison. The greatest impacts were found in the CBD markets, particularly the Milwaukee CBD market, which would account for about 75 percent of the State's overall VMT reduction should the analyzed TDM programs be introduced on a statewide level.

In the Milwaukee CBD market, a program offering a 75 percent transit subsidy or pre-tax transit benefits to a total of half of all CBD employees would yield a reduction of 23,000 VMT daily, which translates to a 1.6 percent reduction in daily work-related VMT in this market. The potential VMT reduction resulting from a parking cash-out scenario that offered a benefit of $50 per month to 10 percent of CBD employees was estimated at 29,500 daily or 2.0 percent of daily work-related VMT. In the scenario where a combination of transit benefit programs and parking cash-out are provided, an overall additional work-trip VMT reduction of potentially 2.7 percent is expected.

Businesses and agencies would incur costs for these programs in two main areas: program administration and the actual cost of the subsidy. By doubling or tripling the current level of resources devoted to marketing efforts, additional program/recruitment costs could be on the order of $200,000 to $300,000 statewide among all participating public agencies. Subsidy costs to public agencies (e.g., for transit passes) will vary depending on the type of subsidy applied. From the businesses' standpoint, it is estimated that it would cost approximately $2,800 a year to administer a TDM program for a mid-size company.

Employer Interviews

Interviews with Milwaukee and Madison employers found that parking cost and availability are considered to be the most important factors motivating employees to participate in TDM programs, not the cost of transit. Additionally, transit coverage in both Milwaukee and Madison is often found to be insufficiently extensive and insufficiently frequent for most employees to consider it a viable option. These findings are consistent with most travel demand forecasting models and the general understanding of factors impacting transit ridership. While congestion may become a possible motivation for commuters to consider taking transit in the future, congestion currently is not viewed as a serious problem in Wisconsin. Many human resources representatives expressed resistance to offering parking cash-out, believing that the effort to administer the program would outweigh the little anticipated participation.

Policy Options

Four policy options are recommended to increase program participation and reduce SOV use through an increase in transit use. These policies are:

1. Increase financial or other support from WisDOT and/or other agencies and private sector entities for person-to-person marketing of TDM programs. The most effective strategies to bring more employers into the pass/ticket programs involve marketing that is both intensive and targeted. While many transit agencies in the State already undertake marketing programs, they could potentially invest more in the labor-intensive (and therefore expensive) effort of personally contacting employers to explain the benefits of the programs, both to the companies and the community, and to address concerns about potential administrative burdens.

2. Provide support at state and/or local levels for concentrated development and for increased parking restrictions in CBD areas. Where parking is scarce, and therefore expensive, and when employers charge for employee parking, use of transit and demand for employer-supported transit programs are likely to increase. Although this can be a challenge politically, land use policies that limit parking availability and increase costs will be effective in increasing pass/ticket program participation.

3. Devote financial or other support for a range of transit service enhancements, including higher frequency, faster travel, broader geographic coverage, and passenger amenities. As mentioned before, level of service is one of the key factors driving transit usage, and is certainly more significant than cost. Consequently, additional financial and planning support for transit agencies would allow for carefully planned and fiscally feasible service improvements.

4. Support and/or provide financial incentives for transit-supportive land uses, especially those that encourage major employers to locate in areas with strong transit service, especially CBDs. If the broad objective is to decrease SOV use, rather than simply to increase participation in the TDM programs assessed in this study, the policy focus needs to be on a package of policies, including TDM, that promotes improved transit service levels and the kind of land use that is conducive to transit, as well as those that discourage SOV use, especially for work trips. In the end, the existence of high levels of transit service in expanding service areas, in addition to higher costs for SOV use, will be more effective than measures that address only (or mainly) the cost of transit usage itself.

1.0 Literature Review

1.1 Introduction

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and the Clean Air Act Amendments (CAAA) of 1990 placed increased federal emphasis on transportation demand management (TDM) as a means of mitigating congestion and air quality problems. TDM measures seek to reduce single-occupant vehicle (SOV) automobile use through incentives, disincentives, and market forces that shift travel toward non-motorized or higher-occupancy transportation modes, reduce, or eliminate the need to travel, and/or shift travel to less congested routes or times of day.

TDM measures take many forms. They can include the enhancement of alternative transportation modes, shared-ride services, changes in work schedules and work sites to reduce commuting during peak periods, economic incentives, and disincentives that change the relative costs of automobile and non-automobile modes, and land use changes. TDM measures are frequently implemented in mutually reinforcing combinations, such as vanpool programs with a guaranteed ride home by taxi if a participant must work late.

This study focuses on three types of employer-based TDM incentive measures: parking cash-out programs, subsidized transit passes, and pre-tax transit benefits. These measures are commonly implemented as part of "Commuter Choice" benefit programs. They all take advantage of recent changes in the Internal Revenue Code [26 USC 132 (f)] that permit employers to offer employees a tax-free benefit for commuting to work by methods other than driving alone.

This section first provides an overview of Commuter Choice programs. It then presents a review of national experience with implementing these programs, including case studies of particular programs. Finally, the current status of employer-based TDM programs in Wisconsin is presented.

1.2 Overview of Commuter Choice Programs

Commuter Choice benefits cover "qualified transportation expenses," which include parking fees, transit fares, and vanpool expenses. Because Commuter Choice programs can provide a mechanism for subsidizing single-occupant automobile commuting through tax-free parking, there is a distinction between Commuter Choice programs and TDM measures as discussed in this report, which may be implemented as part of Commuter Choice programs. Commuter Choice benefits may be offered to employees in any of three ways:

1. **Employer-Funded.** Parking or transit is offered in addition to salary or wages as a non-taxable benefit funded by the employer.

2. **Employee-Funded.** Parking or transit is offered in lieu of salary or wages through a pre-tax payroll deduction by the employee.

3. **Combination.** Parking or transit expenses are shared between the employer and the employee. Transit benefits under this arrangement are sometimes marketed as a "fare share" or "share the fare" program.

In 2002, Commuter Choice benefits may amount to as much as $100 per month ($1,200 per year) for transit and vanpool expenses and as much as $185 per month ($2,220 per year) for parking expenses. These limits are indexed to inflation and may increase in increments of $5 in future years. Employers may offer parking or transit benefits of any magnitude, but any amount over these limits would be taxable.

Employer-funded Commuter Choice benefits are typically offered as a low-cost salary or wage enhancement. Under this scenario, the employer provides a parking pass, transit fare media, a transit voucher, or reimbursement of qualified transportation expenses. The value of this benefit that does not exceed the limits described above is non-taxable and would not appear on the employee's W-2 statement. Likewise, this value would not be subject to the employer's payroll taxes. Table 1.1 shows how an employer could provide a direct $35 monthly transit pass to an employee with no tax consequences. In comparison, a $35 monthly wage increase would cost the employer $37.68, including Social Security and Medicare (FICA) payroll taxes, and provide only $20.25 in after-tax benefit to the employee. This scenario assumes a Wisconsin worker in the 28 percent marginal federal income tax bracket and the 6.5 percent state tax bracket.

Employee-funded Commuter Choice benefits are frequently offered as a pre-tax payroll deduction. Employers deduct all or part of the cost of a transit pass or other fare instrument, a voucher that can be exchanged for transit fare media, or a parking pass, and distribute the item to employees. Similar benefits also are available as a reimbursable qualified transportation expense under a Section 125 Flexible Spending Account or cafeteria plan. An employee submits proof of payment for transit or parking services and receives reimbursement from an account that contains his or her pre-tax payroll deductions. Section 125 plans are subject to strict annual enrollment date restrictions and a "use it or lose it" policy under which any unclaimed funds are forfeited at the end of the year. In each case, the employee receives a benefit equivalent to the federal and state taxes that he or she would have paid on the income associated with the cost of parking or transit. As shown in Table 1.1, the same Wisconsin worker could receive a $35 monthly transit pass at a cost of $20.25 under this plan. His or her employer would enjoy a savings of $2.68 per month in FICA taxes because of a reduction in taxable salary or wages.

Table 1.1 Comparison of Commuter Choice Benefit Program Structures

Scenarios for $35 monthly transit pass or parking fee	No Benefit Program	Salary or Wage Increase	Employer-Funded Benefit	Employee-Funded Benefit	50 – 50 "Fare Share" Combination
Employer Perspective:					
Pre-Tax Cost to Employer	–	$35.00	$35.00	–	$17.50
Less (Plus) Employer-Paid FICA Taxes	–	($2.68)	–	$2.68	$1.34
After-Tax Cost (Value) to Employer	**–**	**$37.68**	**$35.00**	**($2.68)**	**$16.16**
Employee Perspective:					
Pre-Tax Value of Transportation Received	–	$35.00	$35.00	–	$17.50
Less Federal, State, and FICA Taxes	–	$14.75	–	–	–
After-Tax Value of Transportation Received	**–**	**$20.25**	**$35.00**	**–**	**$17.50**
Pre-Tax Cost of Transportation Purchased	$60.50	$60.50	*$35.00*	*$35.00*	*$35.00*
Less Federal, State, and FICA Taxes	$25.50	$25.50	–	$14.75	$7.38
After-Tax Cost of Transportation Purchased	***$35.00***	***$35.00***	**$35.00**	**$20.25**	**$27.62**
Employee Savings due to Program	–	$20.25	$35.00	$14.75	$24.88

Commuter Choice benefits also may include a parking cash out (PCO) program. An employer that provides free or subsidized parking may allow employees to take all or a part of the value of the parking in cash or as a transit benefit. The portion taken in the form of a transit pass or voucher is non-taxable, subject to the limits described above. Any cash received is taxable, but effectively provides additional compensation for those who do not drive to work.

1.3 National Experience

Cambridge Systematics conducted a literature review of transit benefit and parking cash-out programs that have been implemented across the nation. A major objective of the literature review was to determine the nature of these programs and the context in which these programs were implemented. An additional objective was to identify both common barriers and effective guidelines to successfully implementing these programs. Telephone interviews were conducted where published literature did not provide sufficient detail for the purposes of this study.

Transit Benefits

Commuter Choice programs have typically been organized and implemented by regional transportation authorities or local transit agencies. According to an inventory by the U.S. Environmental Protection Agency (EPA), more than 30 cities and metropolitan areas have Commuter Choice programs in which agencies provide transit passes, ticket books, or other fare instruments to employers for distribution to employees. And more than 20 cities and metropolitan areas have Commuter Choice programs in which employers distribute transit vouchers to employees (See Appendix A). Transit vouchers are typically offered in areas with multiple transit agencies to give employees maximum flexibility in redeeming their benefit and to simplify fare media distribution for employers. Depending on the agency, fare media and vouchers can be sold to employers at a discounted rate to encourage employer participation, however agency discounts are more commonly applied to fare media than to vouchers. Employers can then distribute these passes or vouchers to employees free or subsidized.

Although a number of agencies have developed employer commuting programs, many employers still remain uninvolved. In a study of five metropolitan areas (Washington, DC, Boston, Miami, Minneapolis and San Francisco), multiple factors were cited as barriers to implementing transit benefit programs.[1] All surveyed agencies (regional commuter organizations and transit agencies) agreed that the administrative effort to establish a transit benefit program was considered too burdensome for many already busy human resources and payroll departments. Also, some agencies found that there was little cost incentive for employers located in areas where public transit was expensive or for those who already had a majority of employees taking transit. All agencies admitted that among employers, there was generally a lack of understanding as to how the tax incentives worked. Many firms were concerned about equity issues, particularly if they had multiple work sites. Boston, Miami, and Minneapolis found that convincing upper management was a significant obstacle to effecting change. Also, Boston and San Francisco cited the lack of full-time employee transportation coordinators at firms to be a hindrance to maintaining a continuous working relationship with agencies.

Consequently, agencies have developed a variety of ways to try to diminish some of these barriers and to make programs easier for employers to get involved. Many provide financial incentives to employers by using creative discounting strategies. Some of these strategies include offering free passes to the company's employees for the first year of participation, matching an employer's contribution, extending larger discounts for significant employee participation, and simply requiring employers to offer a discount to their employees. Some agencies provide workshops at the employer's work site to educate employees on the tax incentives and other benefits as well as to provide specific transit service information. Typically, agencies will supply employers with marketing and promotion materials. Agencies have found that case studies demonstrating how other companies have benefited from

[1] ICF Consulting. "Strategies to Increase the Effectiveness of Commuter Choice Programs: Findings from Transportation Agency Interviews." Presented at the 81st Annual TRB Meeting. January 2002.

transit benefit programs to be highly effective marketing tools. Many agencies ship fare media or vouchers directly to the employer through certified mail to reduce administrative effort. In addition to passes and vouchers, several agencies have bundled supporting services such as guaranteed ride home, ridematch, and vanpool programs to expand commuter options. Often, these auxiliary programs minimize the risk of taking transit for those who are accustomed to having a personal car available for emergency situations.

A number of public and private employers who have overcome the obstacles of adopting a program have found much receptivity from their employees.[2] Seattle's Minor and James Medical Clinic provides its 340 employees with a free unlimited ride transit pass and a guaranteed ride home program. The program has been popular, with as many as 80 percent of employees now taking transit to work. Chicago's General Growth Properties allows employees to make a $65-per-month deduction from their pre-tax salaries toward the purchase of transit vouchers. Approximately half of this 500-employee company is enrolled in the program. The University of Washington's U-PASS program involved a noteworthy combination of TDM strategies beyond the provision of a discounted unlimited ride pass. The program consisted of increased transit service, shuttle service, carpools, vanpools, ridematch, bicycles, guaranteed ride home, commuter tickets, merchant discounts, and an increase in the price of parking. Within the first weeks of implementation, the university experienced a 15 percent decrease in morning trips to campus and a nine percent decrease in afternoon trips from campus. SOV use went from being the largest mode share at 33 percent to the second largest mode share at 23 percent. Transit replaced SOV use as the largest mode share, increasing from 21 percent to 33 percent.[3]

Transit Benefit: Case Study[4]

The Lloyd District Partnership Plan is a joint effort by the city of Portland and the regional transit provider to curb commuter SOV use in a high-density commercial and residential district near downtown Portland. The implemented TDM strategy includes a combination of transit facility and service improvements, rideshare, and bicycle improvements, parking management strategies (limits on parking supply and meter installation) and the implementation of a marketing plan that includes the Tri-Met PASSport program.

The PASSport program provides annual transit passes to all of a company's employees at a discount dependent on the company's location and its pre-existing ridership. That is, the cost of the passes is based on the number of people who ride transit prior to the

---

[2] U.S. Environmental Protection Agency. "Transit and Vanpool Benefits: Implementing Commuter Benefits Under the Commuter Choice Leadership Initiative." September 2001.

[3] U.S. Department of Transportation. "Upass: A Model Transportation Management Program That Works." Transportation Research Record 1404. 1993.

[4] Bianco, Martha J. "Effective Transportation Demand Management: The Results of Combining Parking Pricing, Transit Incentives, and Transportation Management in a Commercial District of Portland, Oregon." Presented at the 79th Annual TRB Meeting. January 2000.

PASSport program divided by the total number of employees within the company. Consider for example, prior to participating in the program, a company of 100 employees that has only 10 transit riders, each paying $20 per month for transit use. This totals $200 per month of transit use for this company. Under the PASSport program, the company would pay $200 per month for all 100 employees to use transit, an equivalent of $2 per employee per month. The employer has the option to recover some or all costs by reselling the passes to employees. Companies participating in the PASSport program are eligible for subsidy-related federal tax benefits or federal pre-tax payroll deductions. The basic structure of the PASSport program has been applied in other cities as well, including the Dallas employeE-Pass, Minneapolis-St. Paul MetroPass, and Eco-Pass programs in Denver, Salt Lake City, and Santa Clara, California.

In addition to these incentives, the state of Oregon developed the Business Energy Tax Credit, which applies to companies who subsidize the cost of transit passes. Sponsored by the Oregon Office of Energy, approved companies can deduct 35 percent of its transit pass subsidy from its state tax liability. Bundled within the PASSport program are a number of supporting services which include: a guaranteed ride home program, trip planning services, training for an in-house transportation coordinator, and education and marketing services.

Evaluation of the Lloyd District Partnership Plan was based on a sample of 1,370 employers with between one and 500 or more employees each. The study examined the change in travel behavior by PASSport employees and non-PASSport employees as a result of parking pricing strategies. PASSport employees were defined as employees who said their company offered a discounted transit pass, but did not necessarily use the PASSport program themselves. Non-PASSport employees were those who said their company did not offer a discounted transit pass.

Among PASSport employees, as a result of parking pricing, there was a 19 percent decrease in the drive-alone mode share and a 12 percent increase in transit use. For non-PASSport employees, it was found that the drive alone mode share actually increased as a result of parking pricing. Non-PASSport employees were highly adverse to using modes other than driving alone and simply adjusted to the installation of parking meters by parking in other locations. For the entire sample, the parking meters (22 percent) and the PASSport program (19 percent) were commonly named as the Number One reason why people changed their travel habits. As the second reason, almost 36 percent cited the PASSport program. The study found that "[the parking meters and the PASSport program] are equally essential in a transportation management program. The meters provide the drive-alone disincentive, while the PASSport provides the transit incentive."

The study also cited three main categories of employees who would be most unlikely to shift from SOV use despite the Lloyd District Partnership Plan's combination of TDM strategies. They include:

1. Those who often need their car for trip-chaining purposes, whether it be for household reasons or job-related reasons;
2. Those who think they do not have convenient access to transit; and
3. Those who can afford to pay for off-street parking or receive free parking from their employer.

In summary, relevant findings and conclusions include:

- An effective TDM program should have reinforcing SOV disincentives (such as parking pricing) and transit incentives (such as the PASSport program).

- There are some individuals who will remain reluctant to shift from SOV use regardless of TDM strategies. However, there are a number of individuals who are on the margin in mode choice. Consequently, it is important for TDM programs to expand commuting options and flexibility for those who may want to alternate between modes throughout the work week.

- The study revealed a lack of information about commuting options among commuters. This emphasizes the need for rigorous educational and promotional activities on the part of sponsoring agencies.

- The success of TDM strategies greatly rely on the coordination of agencies and the support of local businesses.

Parking Cash-Out (PCO)

CS' research found that PCO programs have not been as widely implemented as transit pass and voucher programs. Although PCO is a simple concept and relatively easy to administer, there is resistance to PCO programs because willingness to participate hinges on the availability of viable alternatives to driving alone and on opportunity costs for the employer. Also, it challenges how society has priced parking for many years. Employers have traditionally provided free parking to their employees and, consequently, employees have come to perceive parking as an "embedded" benefit. In addition, employers face equity issues and the pressure to equally subsidize the use of public transportation. As a result, to date, most PCO programs have been implemented under legislative mandate in California. Only a limited number of voluntary PCO programs have been instituted in other states, more notably in Minnesota and Washington.

Generally, a PCO program is most conducive in settings where:

- The employer leases parking separately from its office space. This provides cost justification and an existing means of limiting access to parking.

- The employer is located downtown, where parking is expensive and many other transportation alternatives are available to the commuter. This makes transit alternatives more competitive with the automobile in terms of cost and convenience.

- The employer is confronted with the need to acquire additional parking space or an opportunity to lease parking to an outside party. PCO could be an opportunity for the employer to save money or generate new revenue.

In general, programs are successful when they involve willing employers or when PCO is a mandatory requirement of employers. At a number of work sites where PCO has been

successfully instituted, mode shifts have been significant.[5] CH2M Hill in Bellevue, Washington experienced a drop of 35 percent in the drive alone mode share among its 430 employees after the company offered $40 per month to employees in exchange for their free parking spot. The University of St. Thomas in Minneapolis offered its 238 employees $100 per year and the option to purchase transit passes on a pre-tax basis on the condition that they forego a parking spot. Nearly a quarter of the employees opted to give up their parking spots and used an alternative to driving alone. Nationwide, studies reveal that, on average, a program can reduce driving alone to work by approximately 20 percent.[6]

Mandatory Parking Cash-Out: Case Study[7]

In 1992, California law introduced parking cash-out in an attempt to discourage SOV use and to encourage the use of more environment-friendly means of transportation. The legislation mandated that employers with 50 or more employees who provide their employees with free parking must offer their employees the parking cash-out option. The University of California, Los Angeles, surveyed eight Southern California employers that participated in a parking cash-out program. The company sizes ranged from 120 to 300 employees. Of the eight firms, two were located in downtown Los Angeles and three were located in a high-density regional center. The remaining were located in Santa Monica and West Hollywood. Parking rates at the work sites ranged from $36 to $165 per month.

As a result of their participation in the PCO program over the course of one year, these firms jointly reduced SOV use by 17 percent. Vehicle-miles traveled for commuting were reduced by 12 percent. During a time when carpooling was on a nationwide decline, these eight work sites experienced an increase in carpooling by an average of 64 percent. The study reported the following environmental benefits as reductions per participating employee per year: 1.8 pounds of ROG emissions, 1.5 pounds of NOx emissions, 15.9 pounds of CO emissions, 1.1 pounds of PM_{10} emissions, 807 pounds of CO_2 emissions and 26 gallons of gasoline consumption.

Representatives of the firms reported that the administration of the PCO program was simple and that the PCO program was an excellent recruiting tool. The study also indicated that, combined, the eight firms reduced their parking subsidies by almost as much as they increased their cash payment in place of parking subsidies. That is, their overall subsidy reductions and increases almost netted out.

---

[5] U.S. Environmental Protection Agency. "Parking Cash Out: Implementing Commuter Benefits Under the Commuter Choice Leadership Initiative." September 2001.

[6] ICF Consulting. "Parking Cash Out: Briefing Paper for the Commuter Choice Leadership Initiative." Submitted to the U.S. Environmental Protection Agency. January 2001.

[7] Shoup, Donald C. "Evaluating the Effects of Cashing Out Employer-Paid Parking: Eight Case Studies." Submitted to the Sacramento: California Environmental Protection Agency. August 1997.

Voluntary Parking Cash Out: Case Study

In 1998, the Minneapolis-St. Paul Metropolitan area tried to promote PCO among employers who provide their employees large parking subsidies. This program was spawned by David Van Hattum of the Downtown Minneapolis Transportation Management Organization (TMO). In light of the Twin Cities' growing congestion problem, Van Hattum studied the California PCO experience and viewed a PCO program in the Twin Cities' Metropolitan area as an opportunity to educate employers and commuters about how auto and transit use are priced.[8]

Upon receiving a grant from the EPA, three agencies (the Downtown Minneapolis TMO, the St. Paul TMO, and Metro Commuter Services) worked together to market transit benefit programs, distribute brochures, and meet with employers to educate and promote the concept of PCO. The project team encountered challenges in promoting PCO as it is traditionally defined. As a result, the team refined the term "parking cash out" to include any "change in the provision of parking and other transportation benefits that effectively levels the playing field between the benefits provided to those who drive alone and those who choose an alternative to driving alone and forego a parking space."[9] Donald Shoup later coined the term "partial cash out" in reference to Minneapolis-St. Paul's broadened definition of PCO.

In a study submitted to the EPA in June 2000, the Twin Cities examined seven employers taking part in a partial cash out. Six employers were located in downtown areas, one was located in the suburbs. Employers ranged in company size from 59 employees to 13,023 employees. The employers included both private and public agencies, and ranged from service to corporate industries. A variety of partial cash out strategies were used, based on terms deemed suitable by each employer. The University of St. Thomas offered its employees the choice of a $100 per month commuter incentive or $137.50 per month toward parking, where parking costs equal $150.00 per month. Minnesota Communications Group offered its employees $25 per month toward a bus pass or free parking, where parking costs $100 per month to the employer. (It should be noted that the state of Minnesota offers a state tax credit to employers who provide transit and vanpool benefits. Employers are given a state tax credit equal to 30 percent of the expense incurred in the provision of transit and vanpool benefits.[10]) Overall, the study found an average of 11 percent mode shift among the seven employers, a total of 2,303 employees changing in their commuting decisions. The study translates this to approximate daily savings of 60,000 VMT, 600 pounds of ozone precursors, 50,000 pounds of greenhouse gases, and 2,500 pounds of carbon monoxide. Given that the Twin Cities Metropolitan Council estimates the region's

---

[8] Telephone conversation with David Van Hattum. March 13, 2002.

[9] Van Hattum, David. "Implementation and Analysis of Cashing-out Employer Paid Parking by Employers in the Minneapolis-St. Paul Metropolitan Area." Submitted to the MPCA and the U.S. Environmental Protection Agency. June 2000.

[10] Minnesota Statute 290.06, subdivision 28.

daily VMT at 52 million,[11] these savings account for approximately 0.1 percent of the region's daily vehicular emissions.

The study cited the following factors as hindrances to partial cash out implementation in the Minneapolis/St. Paul region:

- Elected officials remain reluctant to mandate parking cash out;
- Employers were not motivated to implement a new program with little obvious and direct benefits;
- An auto-centric mentality often prevailed;
- In order to address equity issues, employers would have to subsidize transit use to those already taking transit; and
- Several unions in the region had successfully bargained to get free parking many years ago.

Although not explicitly stated in the study, another common hindrance to parking or partial cash-out programs is the need for parking access control or surveillance to ensure participant cooperation. Unlike downtown parking garages, many suburban employers do not have the necessary mechanisms already in place to easily implement a PCO program.

While there are various types of parking subsidies that are being practiced in the Twin Cities region today, Van Hattum knows of approximately 12 employers in total that currently are participating in a partial cash-out program. Seven of the employers were those examined in the study. The five other employers, ranging in company size from 35 to 1,500 employees, joined the program after the completion of that study. All participating employers are located in the downtown areas. One suburban employer no longer participates in partial cash out for reasons unrelated to the program.

[11] Metropolitan Council Transportation Policy Plan. January 2001.

1.4 Wisconsin Programs

Cambridge Systematics conducted personal and/or telephone interviews with staff responsible for TDM activities at the Wisconsin DOT and each urban bus system in Wisconsin to identify the nature of Commuter Choice and related programs. Each interview included questions about the size and scope of any program; how costs are split among transit agencies, employers, and employees; marketing efforts to employers; related programs, such as guaranteed ride home and vanpools; measures of success; and lessons learned.

Commuter Choice Programs

Efforts to encourage employers to implement Commuter Choice programs are typically made by transit agencies in Wisconsin. Subsidized transit passes and pre-tax transit benefits comprise the majority of these initiatives. In general, transit benefits have been more appropriate in larger cities where limited parking supply, traffic congestion, and large downtown employers well served by bus routes create an incentive for choice riders to use transit.

As shown in Table 1.2, transit agencies in Milwaukee, Madison, LaCrosse, Racine, Waukesha, Eau Claire, Superior, and Appleton, in decreasing order of participation, distribute transit passes or vouchers to employers on a regular basis. In Wausau, the transit agency invoices the hospital periodically for rides taken by hospital employees to and from work. In Wisconsin's smaller cities, hospitals are typically the major participants in such programs, due to parking constraints at their facilities. Transit systems in Janesville, Green Bay, and Sheboygan have attempted to implement a Commuter Choice program, but have found very little interest among area employers. Lack of traffic congestion, abundant free parking, and services that cater primarily to the transit-dependent were cited as reasons.

Table 1.2 Commuter Choice Programs in Wisconsin

City	Transit Agency	Program	Employers Participating	Employees Participating
Appleton	Valley Transit	Informal pass sales	2	5
Beloit	Transit System	None		
Eau Claire	Transit System	Informal pass sales	1	30
Fond du Lac	Area Transit	None		
Green Bay	Metro	None		
Janesville	Transit System	None		
Kenosha	Dept. of Transportation	None		
LaCrosse	Municipal Transit Utility	MTU Works	6	110
		U-PASS	1	23,200 *
Madison	Metro	Commuter Choice	28	568
		U-PASS	1	40,400 *
Manitowoc	Maritime Metro	None		0
Milwaukee	County Transit System	Commuter Value Certificate	70	1,500
		Commuter Value Pass	25	3,600
		U-PASS	1	29,600 *
Oshkosh	Transit	None		
Racine	Belle Urban System	Informal pass sales	6	90
Sheboygan	Transit Utility	None		
Stevens Point	Transit	None		
Superior	Duluth Transit	Informal pass sales	1	20
Waukesha	Transit Utility	Informal pass sales	5	50
Wausau	Area Transit System	Hospital employees	1	10
Total, not including U-PASS programs			**145**	**5,983**
Total			**148**	**99,183**

* Participation in U-PASS programs represents total enrollment, not necessarily the number of students using transit.

Milwaukee – The Milwaukee County Transit System (MCTS) offers two programs to commuters and their employers. Both programs developed out of a voucher program operated by a third-party contractor beginning in 1991. MCTS brought the voucher program in-house in 1994 to save employers the fees imposed by the private company. The program is now staffed with approximately 1.5 full-time people who administer and market

the programs to employers. MCTS markets the programs by targeting human resources directors at large companies in the central business district for personal sales calls and by advertising the availability of tax-free transit on buses and its web site to generate employee interest and referrals. The marketing staff also holds annual on-site registration drives to share transit trip planning information, make photo IDs for passes, and boost participation at targeted employers.

Both programs use a cost-sharing approach in which employers and employees share the cost of the transit benefit. In focus groups conducted by MCTS during implementation planning, executives and human resources directors of major area companies cited the possibility that some free passes would go unused and, for employers who do not subsidize the full cost of parking, that subsidizing the full cost of transit would be unfair.

"Commuter Value Passes" allow employers with 25 or more participants to purchase discounted transit passes and offer them to employees at substantial savings compared to regular bus fares. Passes are implemented as a quarterly validation sticker on a photo ID card. MCTS sells annual passes to employers for $400 per year on a quarterly basis. This represents a savings of more than 35 percent compared to the equivalent cost of weekly passes ($12 each). Employers cannot sell them to employees for more than $17 per month ($204 per year), which corresponds to a minimum subsidy of approximately 50 percent. Some employers subsidize passes at a higher level. Many employers implement this as a non-taxable employer contribution and a pre-tax employee contribution, although MCTS does not have direct knowledge of these details. The program has 25 employers and between 3,500 and 3,700 participants. The program contributes between three percent and four percent of total revenues for the transit agency.

Employers with fewer than 25 participants may distribute "Commuter Value Certificates." These vouchers, available in denominations of $12, are redeemable for transit passes or 10-ride tickets. No fee is charged for vouchers and no discount from face value is offered. Employers are not allowed to charge employees for vouchers. However, since denominations correspond to the cost of a ticket book or a weekly pass, cost sharing is commonly achieved by providing a benefit of one or two certificates per month to employees. As a result, employees are not able to purchase their share of the cost of transit using a pre-tax payroll deduction. The program currently involves between 60 and 80 employers and approximately 75,000 vouchers per year are distributed.

Both programs include an Emergency Ride Program administered by MCTS for when an employee's or family member's illness or medical emergency requires a trip for which one's normal transit service is not available. Although the program is provided by MCTS at no cost, some employers opt out of the program. MCTS provides participating employers with claim forms that employees give to a taxi driver when an emergency ride is needed. The taxi company charges MCTS directly. The program is used only about six times per month, on average.

MCTS offers a U-PASS program to approximately 29,600 students at Marquette University, the Milwaukee Institute of Art and Design, and the University of Wisconsin-Milwaukee. U-PASS is an unlimited-use transit pass paid for as part of one's university tuition and student fees. The cost is $35 per semester. The cost was established to be

approximately revenue neutral based on student ridership, including some additional service. Although all students pay the fee, between 50 percent and 55 percent of eligible students get the pass, which is a sticker applied to their school ID cards. Although all students holding the pass do not necessarily use transit, when the program was introduced in 1994, the transit mode share among students rose from 17 percent to 25 percent, with some routes near campus realizing a 40 percent increase in ridership.

MCTS also offers a vanpool program that is not related to its transit pass and voucher programs. The vanpool program is modeled after Pace's VIP service in Chicago. MCTS offers vans to employers for approximately $200 per month plus $0.10 per mile. Employers are responsible for organizing groups of users. Employers pass some or all of the costs of the van to employees, often on a pre-tax basis. Based on Chicago experience, MCTS originally expected that the Milwaukee area could support between 50 and 100 vanpools. The program has not been as successful as originally expected, primarily because the Milwaukee area has much shorter commute trips than Chicago. Some vanpools are used for trips outside Milwaukee County, such as to major employers in Racine or Kenosha, a market that MCTS does not actively pursue.

MCTS attributes the success of its Commuter Value program to the following factors: close coordination with employers, good value for the employee, and targeted marketing with continuous follow-up to the employers in locations that could benefit most from the program.

Madison – Madison Metro offers monthly transit passes, weekday-only commuter passes, and 10-ride ticket booklets to employers on a consignment basis. There are currently 28 employers participating in the program. Madison Metro does not track the terms by which employers distribute fare media to employees, but it is believed that some employers provide transit as a non-taxable transit benefit and that some sell passes to employees, not necessarily on a tax-free basis.

Madison Metro has one person marketing the program to employers, but she has other responsibilities as well. In general, the transit agency has found mass media, including radio and television ads featuring testimonials by area employers, to be an effective way to market the program. A front-page newspaper article about the program also generated interest. Direct mail did not produce a strong response from employers. However, the transit agency recently used a state TDM grant to identify University of Wisconsin faculty and staff who lived near a transit route serving campus and sent them two ride tickets. The program was subsequently expanded to include city of Madison employees. Although specific ridership statistics were not available for this study, this campaign is considered to be successful.

The transit agency does not offer a guaranteed ride home program to employers who participate in its Commuter Choice program. However, the agency is experimenting with the concept on a new peak-period bus route to a suburban office park. The bus route, which is being subsidized by the property manager, is being offered with three taxi vouchers per employee for emergency rides when the bus is not operating.

Madison Metro also provides a U-PASS program to students at the University of Wisconsin. All students pay $20 per semester as part of their school fees for the right to

obtain a transit pass normally valued at $38.50 per month. In the first five years of the program, student ridership increased more than 30 percent from 1.37 million trips per year to more than 1.8 million trips.

LaCrosse – The LaCrosse Municipal Transit Utility administers an employer-sponsored program known as "MTU Works" that puts discounted transit passes in the hands of employees of six major employers. The program started approximately three years ago and now supports 4,500 rides per month, which represents 6.7 percent of total ridership. MTU discounts the normal $26 monthly transit pass by 22 percent, with the requirement that it be sold to employees for at least 65 percent off. A minimum order size of 10 passes is required. MTU also administers a U-PASS program for students at the local University of Wisconsin campus.

Racine – The Belle Urban Transit System has been selling monthly transit passes to various employers for approximately 20 years. There is no formal Commuter Choice program, but the agency delivers approximately 90 passes to six employers every month. No discount is offered on passes, which cost $30 each. The transit agency is not certain how the passes are distributed to employees, but it is believed that they are generally offered as an employer-funded transit benefit. The employers include three hospitals, two small industrial businesses, and the newspaper. Although the employers were not interviewed directly, it is believed that the primary motivations for providing transit passes include parking constraints at the hospitals and employee retention at the other businesses. The transit agency has no active marketing program, but it would like to create a brochure to use when meeting with employers to describe how transit benefits can be implemented. There are no plans to add a guaranteed ride home program because Racine has no taxi service.

Waukesha – The Waukesha Transit System Utility also has a long-standing, informal program of selling transit passes to employers. Approximately 50 passes are distributed each month to five employers. Reasons cited by employers for providing transit benefits include parking constraints and the need to transport employees who may not have a car. Waukesha has not discussed creating a formal Commuter Choice program or integrating it with Milwaukee's Commuter Value program.

Eau Claire – The Eau Claire Transit System does not operate a formal employer-based TDM program, but it has been selling approximately 30 passes to the Lutheran Hospital in Eau Claire on a regular basis for more than three years. Passes cost $30 per month and are sold at full price. The hospital distributes the passes to employees free of charge to mitigate a parking shortage at its facility.

Superior – The Duluth Transit Authority (DTA), which operates transit service in Superior, sells monthly passes to approximately eight employers, including one hospital in Superior. The passes are sold at a $1 discount from their regular cost of $28 per month to employers, provided that they offer a further discount of at least $5 to employees. DTA initiated the program in the early 1980s. Although the program includes more than 800 participants throughout the bi-state system, only approximately 20 participants are in Superior. The transit agency markets the program to employees at enrolled employers through biannual payroll stuffers, posters in the lunchroom, and signs near workplace bus stops. DTA considers the program a success, but recognizes the need to continue to market the program to keep it strong.

Wausau – The Wausau Area Transit System (WATS) has an agreement with a major area hospital that allows its employees to ride free to and from work. WATS tracks the number of rides taken by hospital employees through a special rider classification and bills their employer monthly. The program accommodates approximately 300 rides per month. The hospital initiated the program approximately 10 years ago to address a lack of parking near its facility. WATS has discussed similar programs with other employers, but there has not been sufficient interest.

Parking Cash-Out Programs

No Parking Cash-Out programs have been implemented in southeastern Wisconsin. The Wisconsin DOT contracted with a consultant to study the potential for a PCO program in the Schenk-Atwood Business District in Madison. Schenk-Atwood is a revitalizing neighborhood business district on Madison's Near East Side that is well-served by Madison Metro bus routes and has a low automobile mode share. There was insufficient interest by local businesses to justify implementation of the program and the consultant is now exploring the potential of such a program at the Dane County Building in downtown Madison. Dane County owns a parking structure and offers parking, which has a market rate of approximately $100 per month, to senior employees for $15 per month. The PCO program could make more parking available for lease to other area businesses. The cash out benefit has not yet been finalized, but it is expected to be somewhat more than the cost of a bus pass ($38.50 per month).

Related Programs

The Wisconsin DOT does not directly administer any Commuter Choice programs and its experience with PCO programs involves grant administration for the above initiative in Madison. However, it does participate in other TDM activities, including referring employers to information on developing telecommuting programs; referring employers to transit agencies for more information on Commuter Choice programs; providing ride-matching services to employers through its RIDESHARE program; promoting carpool, vanpool, and transit options at company transportation fairs; and providing planning assistance to local Transportation Management Agencies in southeastern Wisconsin. In addition, the Wisconsin Department of Administration (DOA) operates a vanpool program with more than 70 vans in the Madison area that is open to both state employees and the public.

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) currently has little direct involvement with TDM measures. In Madison, the Rideshare Etc. program provides assistance to citizens who are interested in learning more about commuting by carpool, vanpool, transit, bicycle, or walking. It is a partnership of Madison Metro, the Wisconsin DOA vanpool program, the Madison Area Metropolitan Planning Organization (MPO), and state and non-state employers in the area. The Madison MPO administers a ride-matching program with more than 1,300 carpools.

As of fall 2001, the Wisconsin DOT implemented an Emergency Ride Reimbursement program in District 2 (southeastern Wisconsin). The main objective of the program is to encourage ride-sharing. The program reimburses employers up to $0.33 per mile for the costs of transporting workers who do not commute by SOV in the event of a personal emergency. The employer may use any means of transportation, including hiring a taxi, having a coworker drive, or lending a fleet vehicle. The agency recognizes that this is not a full-cost reimbursement program, but is providing it as an incentive for employers to implement their own guaranteed ride home programs. Currently, there are no participating employers. This is due in large part to the lack of advertising and marketing of the program. Having recently received grants to establish a full-fledged marketing campaign, District 2 will begin actively pursuing employer applications in spring 2002. The marketing campaign will start by targeting 250 employers that are currently members of Partners for Clean Air.

1.5 Key Lessons Learned

Nationwide, the implementation of Commuter Choice benefits and other TDM programs have encountered many recurring barriers as well as successes. Many of the lessons learned are relevant to efforts to develop a TDM strategy in Wisconsin. These lessons include:

- Employer-based TDM strategies have been most effective in central business districts or other high-density centers where parking is secure and has an established market price, and where transit service is good. These areas have the right combination of substantial parking costs and good transit service to provide a reasonable alternative to driving alone. In addition, downtown areas frequently have large employers with regular work schedules that are well-served by transit. Programs in suburban areas with plentiful parking and less convenient transit service face much greater barriers to employer and employee acceptance. In Wisconsin, the central areas of Milwaukee and Madison offer the most suitable conditions for the success of TDM programs.

- TDM strategies need to be tailored to local market characteristics and needs.

- An effective TDM program entails a reinforcing combination of SOV use disincentives and transit use incentives.

- Strategies should provide the commuter flexibility and a range of commuting options. This can cater to individuals who are on the "fringe" of mode choice. For example, guaranteed ride home programs are important to support mode-switching to transit or carpooling.

- Short of mandating strategies such as PCO for *all* employers, public agencies can be an example to private employers by implementing PCO and commuter benefits programs for their own employees.

- Education and marketing are important components of an effective TDM program. For example, employers are often uncertain as to how tax incentives work, which is an issue that can be easily addressed by agency outreach.

- Administrative simplicity for employers is required to achieve high levels of participation. Even after signing an employer up, it is important for the transit agency to follow up periodically to recruit new employee participants.

- Cooperation is critical between participating agencies (MPOs, transit agencies and employers).

- Implementing a State Tax Credit for employer-provided transit and vanpool benefits or for Employer Commute Programs not only gives added incentive for employers to adopt a program, but also demonstrates how government encourages employers to take socially responsible measures. States which have implemented such tax credits include: Maryland, Georgia, Minnesota, Delaware, Connecticut, New Jersey, and Oregon. In 2000, 26 Oregon employers applied for transit benefit-related state tax credit and jointly received approximately $334,000 in approved state tax credit. In the following year, Oregon employer state tax credit applicants increased to 33, resulting in nearly $450,000 in approved state tax credit.[12]

- On the whole, transit benefit programs have been much more successful in gaining employer and employee acceptance than PCO programs. PCO is a fairly new concept that challenges longstanding perceptions of how parking is valued. Education and initiative are instrumental in developing wider acceptance of PCO programs.

- Transit agencies should be prepared to make service improvements, if necessary, to support increased ridership. As is discussed in detail in Section 3.0, transit service levels, operating speed and frequency are among the most important factors influencing ridership levels. They are generally considered to be more important than, for example, fares.

[12]Telephone conversation with Connie Kepler, Oregon Office of Energy. May 2002.

2.0 Impact Analysis

2.1 Introduction

This section describes the potential reductions in vehicle-miles of travel (VMT) that could be achieved through implementation of pre-tax transit benefits, employer transit subsidies, and/or parking cash-out in Wisconsin, known collectively as "Commuter Choice" benefits. It also discusses potential costs to public agencies and employers of implementing these benefits. The section is divided into the following parts:

- An overview of the approach taken to analyzing VMT benefits;
- A description of the Commuter Model used in the benefits analysis;
- A description of assumptions and findings for each employment "market" in which VMT benefits are analyzed;
- A summary of overall VMT benefits across all markets; and
- A discussion of potential public and private-sector costs of implementing Commuter Choice benefits.

2.2 Approach to Benefits Analysis

The analysis of potential VMT benefits is performed separately for five employment market areas:

1. Milwaukee CBD;
2. Milwaukee – Rest of Milwaukee county;[1]
3. Madison CBD;

[1] The remainder of the Milwaukee metropolitan area was not included in this market because transit service outside of Milwaukee county is limited to non-existent. There is some transit service, including jobs access and reverse-commute services, to employment centers in Waukesha and Ozaukee counties, but the total ridership and potential for mode-shifting on these services is assumed to be relatively small compared to the Milwaukee County transit ridership market.

4. Madison – Rest of Dane County; and

5. Small cities including Eau Claire, Fond du Lac, Green Bay, Janesville, Kenosha, LaCrosse, Oshkosh, Racine, Sheboygan, Superior, and Wausau.

Each of these market areas has different levels of transit service, parking availability, traffic congestion, and other factors that would be expected to influence employee mode choice. Some relevant characteristics of each market, including total employment, current mode shares, and typical parking costs, are described in Table 2.1.

Table 2.1 Markets and Characteristics

Market	Total Employment[2]	Mode Share[1]				Daily Parking Cost[3]
		Drive Alone	Carpool	Transit	Other	
Milwaukee CBD	86,457	67.6%	15.1%	13.8%	3.5%	up to $12.50
Milwaukee Rest of County	397,137	75.6%	11.1%	5.6%	7.7%	
Madison CBD and University	52,885	50.9%	19.5%	10.8%	18.8%	
Madison Rest of Dane Co.	229,949	70.6%	12.7%	3.4%	13.3%	
Small Cities	410,743	80.9%	10.4%	1.6%	7.1%	

[1] U.S. Census Bureau. Census Transportation Planning Package 1990: Journey to Work Data.

[2] U.S. Census Bureau. Census Transportation Planning Package 1990: Journey to Work Data. Madison data are increased by 34 percent to account for 1990-2000 county employment growth.

[3] Republic Parking System. Parking Costs in Metropolitan Areas Post Double-Digit Growth. www.republicparking.com/news/parkingrates.htm.

To obtain estimates of potential vehicle-trip and VMT reduction, reasonable estimates of the following values had to be assumed:

- The average value (in dollars per month) to the employee of each of the benefits;

- Potential market penetration of the benefit, i.e., the number of employees who are offered the benefit;

- Existing market penetration, if these benefits are already available now to some employees in the market (this is important for calculating the potential additional benefits that can be achieved); and

- Behavioral response, i.e., the impact of a given unit of financial incentive on use of different modes.

Values of assumed benefits and market penetration differ by market and are described below along with results for each market. Information on market penetration for programs in other cities was obtained as part of the Task 1 literature review for this project. Behavioral response values were obtained using the U.S. Environmental Protection Agency's Commuter Model, described in more detail below. These data and assumptions were combined in a spreadsheet to produce estimates of potential VMT impacts.

Limitations to the Analysis

The results of this analysis should be viewed as an order-of-magnitude estimate of the potential benefits of programs. Furthermore, given the significant uncertainties in the extent to which Commuter Choice incentives may be adopted by businesses in each market, they should be considered as scenarios – i.e., estimates of behavioral impacts assuming that given levels of market penetration can be achieved – rather than forecasts.

To complete this analysis, a number of simplifying assumptions have been made. For example, average values of behavioral responses are assumed, rather than evaluating how different groups of workers (e.g., by income, occupation, or parking availability) would respond differently to the incentives. It is also assumed that all employees working for employers that offer Commuter Choice benefits are aware of the benefits and given the opportunity to take advantage of them. An average value of benefits is assumed in each market, even though the actual benefit offered will vary by employer. All commuters are assumed to make choices between single modes, and multimodal trips (e.g., park-and-ride) are not explicitly considered because data are not readily available on these types of trips. Partial use of modes (e.g., two or three days a week) also is not evaluated.

It should also be noted that the number of employees actually offered Commuter Choice benefits can be strongly affected by the participation of just a few large employers. The participation of a single large employer such as a university, government agency, hospital, or business can mean the benefit is available to thousands of employees – the same effect as if tens or hundreds of smaller businesses offered such a benefit. Therefore, estimates of the number of *employers* participating in various programs cannot be easily translated into the number of *employees* affected. The ability to recruit major employers will vary from market to market, depending upon the willingness of the specific employers in that market to participate.

Finally, this analysis focuses only on financial strategies to promote transit use or discourage driving, and does not consider other worksite-based TDM strategies such as carpool or vanpool promotion, guaranteed ride home, telecommuting, or compressed work hours.

It is likely that these options, if offered in combination, would have a more significant VMT impact than just the financial strategies alone. For example, a carpool ridematching service offered in conjunction with parking cash-out could increase the effectiveness of the cash-out program at reducing the number of SOV work trips.

Description of Commuter Model

Underlying Methodology – EPA's Commuter Model is a spreadsheet model designed to estimate the travel and emissions impacts of Commuter Choice programs. The model predicts changes in mode share using a "pivot-point" logit model approach. The logit model is the standard mode choice model used in most metropolitan travel demand forecasting models. The pivot-point model is a special case of the logit model which uses data on the baseline mode shares and the change in time and cost of travel by each mode to predict final mode shares.

The Commuter Model includes coefficients that predict the behavioral response of travelers to time and cost changes. The model includes coefficients for a number of major United States cities, as obtained from these areas' travel demand models, as well as average values for small, medium, and large cities. For the Milwaukee area market analyses, coefficients from Milwaukee were used.[2] For other market areas, locality-specific coefficients were not available, so the average coefficient values for small metropolitan areas (less than 750,000 population) were used.

Input Assumptions – Within the Commuter Model, transit subsidies and pre-tax benefits were modeled as a reduction in the cost of using transit, converted from a monthly to a daily basis using a conversion factor of 20 days per month. Therefore, the model should predict an increase in transit mode share and a decrease in other mode shares. Parking cash-out programs were modeled as a reduction in the cost of using all modes except for drive-alone auto. For parking cash-out, the model should predict a decrease in drive-alone mode share and an increase in mode shares for all other modes.

The change in mode share is related to the baseline mode share; a market with a larger baseline transit mode share, for example, will see a larger increase in transit mode share for a given unit of transit benefit. Larger baseline mode shares indicate areas in which transit service is already more attractive, based on existing ridership.

For the purposes of this analysis, vanpool, bicycle, and walk mode shares were included in the "other" category. Since none of the benefits specifically affect these modes differently than other non-drive-alone modes, lumping them together in a single "other" category will not materially affect the estimated reductions in vehicle travel.

[2] These coefficients are from the SEWRPC model as developed in the early 1990s. A model update is in progress, but updated coefficients are not expected to be available until early 2003.

Outputs – The direct output of the logit mode choice model is a change in mode shares. The Commuter Model translates this into a change in vehicle-trips and VMT, using assumptions about average vehicle occupancy (for carpools) and average trip lengths by mode. The model can also estimate changes in emissions. However, on a percentage basis, the changes in all three measures – vehicle-trips, VMT, and emissions – will be strongly correlated. Therefore, for the purposes of this analysis, only VMT changes are reported.

Figures 2.1 through 2.5 illustrate the potential responses in each market to the transit benefits and parking cash-out programs, as estimated by the Commuter Model.[3] These figures plot the percent change in work-trip VMT in each market as a function of market penetration (the percentage of employees offered the benefit). These figures illustrate how different markets respond differently to similar benefits. The response is greatest in the Milwaukee and Madison CBDs, where existing transit mode shares are relatively high, indicating that transit service can be an attractive alternative. The relative response to transit benefits versus parking cash-out also depends upon the market. For example, parking cash-out has a much more significant impact than transit benefits in the Madison and small cities markets, where other modes (carpooling, walking, bicycling, etc.) make up a greater proportion of the baseline mode share than transit.

2.3 Analysis by Market

Within each of the five market areas, assumptions and impacts are discussed separately for two types of programs: transit benefits (including employer subsidies and pre-tax benefits) and parking cash-out.

Milwaukee CBD

The Milwaukee CBD had an estimated total employment of 86,457 jobs as of 1990, with a drive-alone mode share of 68 percent and a transit mode share of 14 percent.[4] Parking costs range up to $12.50 per day, although typical costs are probably in the range of $7.00 to $9.00.

[3] While average subsidy amounts of both 50 and 75 percent are evaluated, for simplicity only the 75 percent subsidy is shown in the figures. A 50 percent subsidy would produce two-thirds the mode shift of a 75 percent subsidy.

[4] Year 2000 estimates of CBD employment and journey-to-work mode share are not yet available, but anecdotal evidence suggests that the CBD has seen little if any growth over the 1990s. MCTS continues to use a "rule-of-thumb" estimate of 15 percent for CBD transit mode share.

Figures 2.1-2.5 Work-Trip VMT Reduction as a Function of Market Penetration (Commuter Model Output)

Figure 2.1 Milwaukee CBD

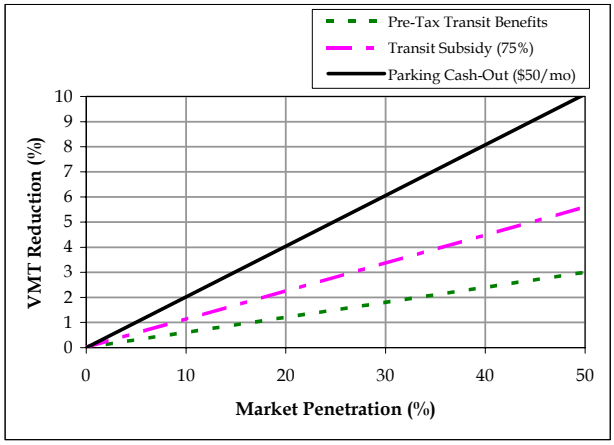


Figure 2.2 Rest of Milwaukee County

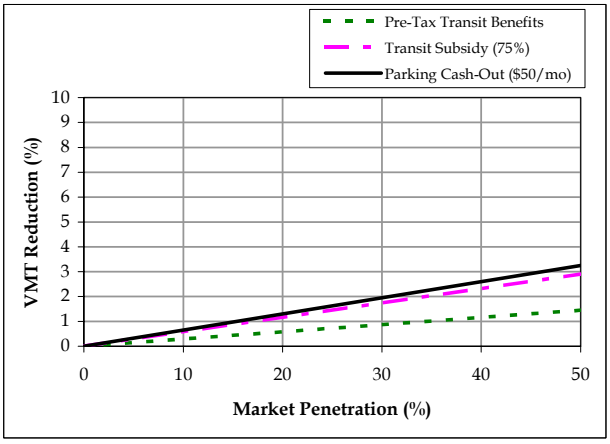


Figure 2.3 Madison CBD and University

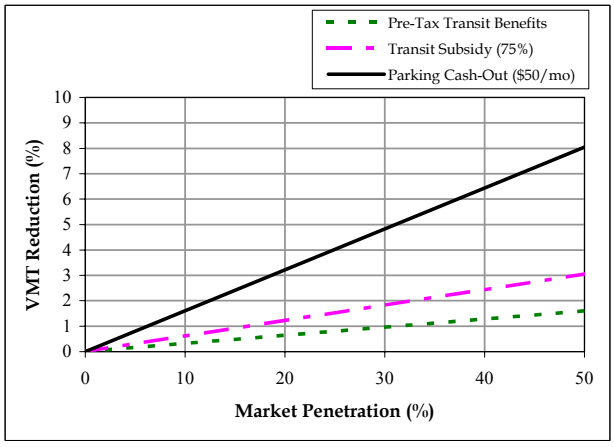


Figure 2.4 Madison – Rest of Dane County

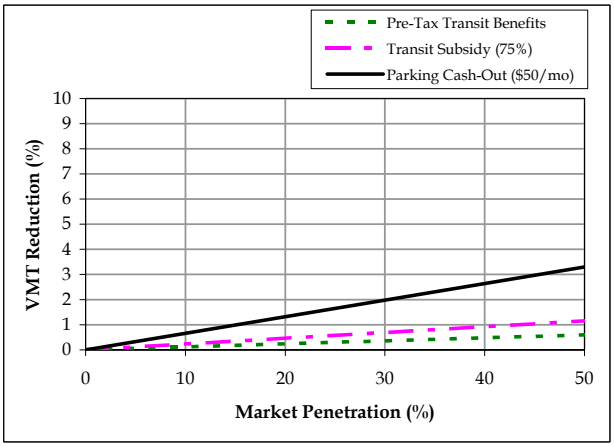
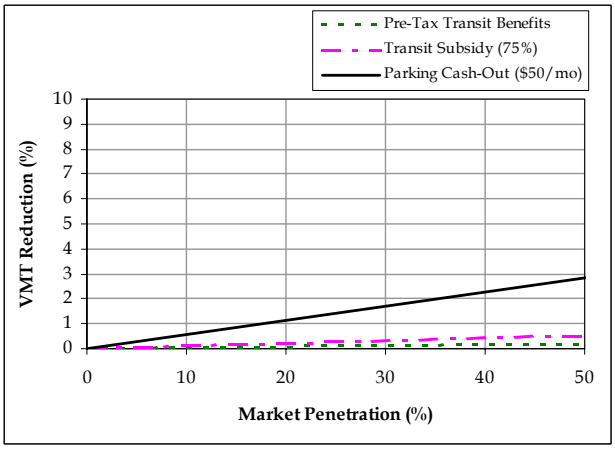


Figure 2.5 Small Cities



Transit Benefits

Existing Conditions and Programs – Milwaukee County Transit System (MCTS) already runs two transit benefit programs, as described in the Task 1 Technical Memorandum:

- Employer-provided transit benefits. MCTS provides Commuter Value Passes to employers with 25 or more employees at a discount. The employer is required to make these available for less than half the value of the pass. This program has an estimated 3,500 to 3,700 participating employees.

- Pre-tax transit benefits. MCTS makes Commuter Value Certificates available to employers with less than 25 employees. An estimated 60 to 80 employers participate, with a total of 75,000 weekly certificates distributed over the course of the year.

Existing Market Penetration – To estimate existing market penetration, it was assumed that most of the MCTS participating employers are in the CBD. MCTS believes that about 90 to 95 percent of its participants are located in the Milwaukee CBD.

- For the employer-subsidized benefits, it was further assumed that transit mode share at participating companies was 20 percent, slightly higher than average. This gives a market penetration estimate of 3,500/0.2 = 17,500 employees, or 20 percent of total CBD employment.

- For the pre-tax transit benefits, 75,000 distributed weekly certificates translates to 1,400 participating employees (75,000/52). This gives a market penetration estimate of 1,400/0.2 = 7,200 employees, or 8.0 percent of total CBD employment.

Potential Market Penetration – To estimate potential market penetration, experiences in peer cities were reviewed. Other Midwestern peer cities include Cincinnati, Columbus, Minneapolis-St. Paul, and St. Louis. Cincinnati, Columbus, and St. Louis all reported that between 10 and 20 employers participated in their transit benefits programs. (The number of employees for these employers varied considerably, so a total employee market penetration cannot be estimated.) The number of participating employers is lower than for the existing MCTS program in Milwaukee, however, so these cities cannot be used to identify a potential upper bound on market penetration in Milwaukee. These strategies suggest that MCTS is already doing relatively well within its peer group at recruiting employer participants.

Data from Minneapolis-St. Paul show higher levels of participation than for the other peer cities. Local agencies estimate that 52 employers with 18,000 total employees participate in the MetroPass program, which provides annual transit passes tax-free. It is estimated that another 500 employers participate in the TransitWorks program, which gives employers a five percent discount on passes if they are provided tax-free to employees. Overall, local agencies estimate that 50 percent of employers in the Minneapolis and St. Paul CBDs offer some sort of transit benefits to their employees. Assuming that the employers offering these benefits are the same size on average as employers not offering benefits, this provides an upper bound of 50 percent market penetration for transit benefits. Also, within this 50 percent, at least 15 percent of employees have employer-subsidized transit benefits available to them through a "partial parking cash-out" program that was implemented recently (as described under "parking cash-out" below).

An optimistic scenario for the Milwaukee CBD assumes that market penetration for transit benefits can therefore be increased to a total of 50 percent, through actions such as more aggressive marketing efforts, state tax credits, or other incentives. (Minnesota provides a 30 percent tax credit to employers who offer transit or vanpool benefits.) It is further assumed that this market penetration is met through a combination of pre-tax transit benefits and employer-subsidized passes, as is currently the case. Final market penetration under this scenario is estimated at 25 percent for employer-subsidized passes and 25 percent for pre-tax benefits.

Benefit Assumptions – The monthly cost of a transit pass in Milwaukee is $48. The monthly financial benefits to the *employee* are assumed to be as follows:

- Pre-tax benefits. $20.16, which is calculated as a 43.15 percent tax benefit on the $48 pass (28 percent federal income tax + 6.5 percent state income tax + 7.65 percent FICA taxes).

- Employer-subsidized transit. $24 to $36, or 50 to 75 percent of the cost of a monthly pass. MCTS currently requires employers participating in their program to provide at least a 50 percent subsidy. However, it is likely that some provide more than this value, even up to 100 percent. The actual range of benefits provided is not known, so a range of 50 to 75 percent subsidy is assumed. A greater or lesser average subsidy will result in correspondingly greater or lesser estimated VMT benefits.

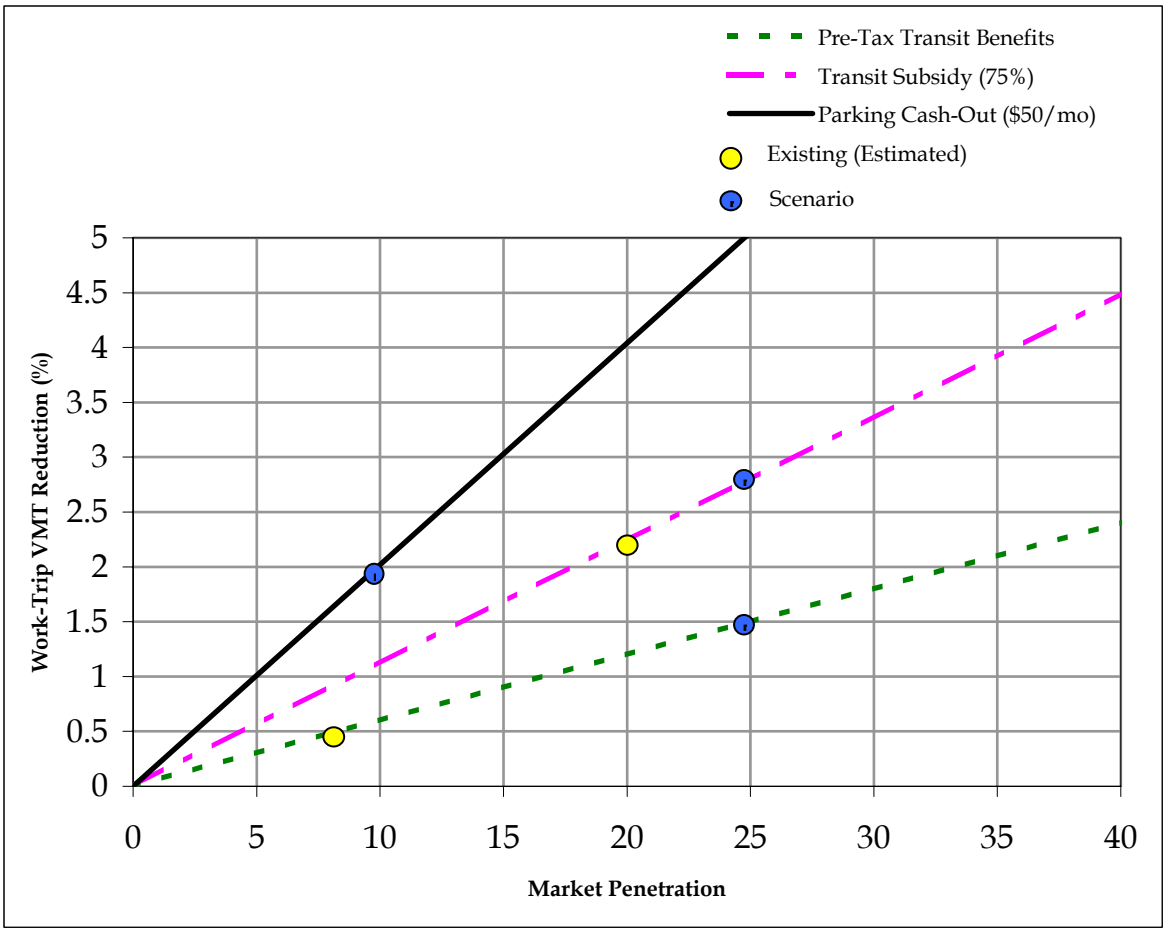
Impacts – The VMT changes corresponding to these changes in market penetration can be calculated based on the data shown in Figure 2.6, which is the same as Figure 2.1 with "existing" and "scenario" market penetration rates added. There is an incremental percent work-trip VMT reduction of about 0.6 percent from a 75 percent transit subsidy (2.8 – 2.2) and an incremental reduction of about 1.0 percent from the pre-tax benefits (1.5 – 0.5). Adding these benefits produces a total work-trip VMT reduction of 1.6 percent, or 23,000 total daily VMT. It should be noted that these benefits are in addition to an estimated 2.7 percent VMT reduction (2.2 + 0.5) that already has been achieved through MCTS's transit pass programs. These results demonstrate that even under an optimistic level of market penetration, the overall benefits are relatively modest.

Sensitivity Analysis – Because MCTS's transit pass program is already relatively aggressive, it is likely that this estimate represents a maximum upper bound on employer participation and market penetration. If the employer transit benefit subsidy averaged 50 percent rather than 75 percent, the total work-trip VMT reduction would be about 1.4 percent instead of 1.6 percent, or 20,200 daily VMT. If the additional market penetration were reached entirely through pre-tax benefits rather than employer subsidies, the overall VMT impact would be about 1.3 percent.

Parking Cash-Out

Existing Programs and Penetration – Milwaukee currently does not have a parking cash-out program; therefore, market penetration is assumed to be zero.

Figure 2.6 Illustration of Benefits for Milwaukee CBD



Potential Market Penetration – A "partial" parking cash-out program was implemented in Minneapolis-St. Paul, the only peer city to implement such a program. A total of 12 employers in the Minneapolis and St. Paul CBDs, representing about 25,000 employees, currently participate in the program. (A single employer – Hennepin County – accounts for 13,000 of these employees.) This represents about 15 percent of total Minneapolis and St. Paul CBD employees. One suburban employer with 685 employees also participated. It should be noted, however, that only two of the participating employers – representing about 1,000 employees – offered a "true" parking cash-out program, in which the employee is offered a financial incentive in lieu of parking, regardless of which alternative mode they choose. The other employers offered free or subsidized bus passes (usually in the range of $15 to $25 per month, which is about half the value of a monthly bus pass costing $42 to $66). For the purposes of this analysis, however, these types of benefits are considered as "employer-subsidized transit benefits" and not as "parking cash-out benefits."

It should be noted that planners with King County, Washington, have been working for about a year to establish a "true" parking cash-out program in Seattle but have not been

successful in recruiting businesses to participate. While this does not bode well for the success of a similar program in Milwaukee, it should also be noted that if even one or two large employers agreed to participate, market penetration could be significant. For purposes of this analysis, therefore, an optimistic scenario is assumed in which a 10 percent market penetration is obtained in the Milwaukee CBD, assuming that a small number of large employers agree to provide cash-out benefits.

Many of the businesses that provide parking cash-out are likely to be the same businesses that would provide transit benefits. Since transit benefits are redundant with parking cash-out, cash-out impacts should not be added to transit benefit impacts. This issue is dealt with under "impacts."

Benefit Assumptions – In the Minneapolis program, the two businesses offering true cash-out benefits offered a $100 per month commuter incentive or $137.50 parking cost (University of St. Thomas) and a $3.00 per day (or about $60 per month) commuter incentive (SuperValu, the suburban employer). The experience with this program, including the transit benefits aspect, suggests that parking cash-out benefits provided are unlikely to be equal to the full cost of parking in the CBD. For this analysis, it was assumed that the average parking cash-out benefit was $50 per month, about the same as the cost of a monthly transit pass.

Impacts – The VMT impacts of 10 percent of employees being offered a parking cash-out benefit of $50 per month are estimated to be up to 2.0 percent of work-trip VMT, assuming that the companies offering these benefits are in addition to those already offering transit benefits, or 29,500 daily VMT. As above, these results demonstrate that even under an optimistic level of market penetration, the overall benefits are relatively modest.

Combined Parking Cash-Out and Transit Benefits

An additional scenario could be evaluated, combining the parking cash-out program with the additional transit benefits described above to obtain a total 50 percent market penetration for parking cash-out and transit benefits. In this scenario, it is assumed that 10 percent of employees have a parking cash-out option of $50 per month, 20 percent have an existing employer transit subsidy valued at $24 to $36 per month, and 20 percent have a pre-tax transit benefit valued at $20.16 per month. Under this scenario the total work-trip VMT reduction, as obtained from Figure 2.6, is 2.0 + 2.2 + 1.2 = 5.4 percent (for a 75 percent subsidy) or 2.0 + 1.5 + 1.2 = 4.7 percent (for a 50 percent subsidy). Netting out the current VMT reduction of 2.7 (or 1.8) percent from existing transit benefits, this provides an overall additional work-trip VMT reduction of 2.7 percent, or 39,900 VMT per day.

Table 2.2 shows potential benefits from two optimistic scenarios – a "maximum transit benefits" scenario and "transit benefits plus parking cash-out" scenario. The percentages represent a reduction in VMT for work-trips to the Milwaukee CBD. As discussed in Section 2.4, the percent reduction when compared to total metro area VMT will be smaller.

Table 2.2 Summary of Potential Benefits for Milwaukee CBD

	Pre-Tax Transit Benefits	Employer-Subsidized Transit Benefits	Parking Cash-Out	Combined Programs
Estimated Existing Market Penetration	8%	20%	0%	28%
Scenario 1: Maximum Transit Benefits				
Estimated Maximum Market Penetration	25%	25%	0%	50%
Potential Additional Work-Trip VMT Reduction	1.02%	0.37% – 0.56%	0%	1.39% – 1.58%
Scenario 2: Transit Benefits + Parking Cash-Out				
Estimated Maximum Market Penetration	20%	20%	10%	50%
Potential Additional Work-Trip VMT Reduction	0.72%	0.00%	2.02%	2.74%

Milwaukee – Rest of County

The remainder of Milwaukee County (outside the CBD) has an estimated 1990 employment of 397,137, a drive-alone mode share of 75.6 percent, and a transit mode share of 5.6 percent.[5] While transit service is available in much of the county, its frequency, and service coverage, combined with the availability of free parking in most locations, make transit attractive to a much smaller percentage of employees with access to a car than in the Milwaukee CBD.

The "rest of Milwaukee County" market includes employment and students at the University of Wisconsin-Milwaukee and Marquette University, potentially significant

[5] 2000 Census data for the Milwaukee Primary Metropolitan Statistical Area (PMSA) – which includes Milwaukee, Ozaukee, Washington, and Waukesha – show a 4.3 percent public transit mode share compared to 5.2 percent in 1990, a slight decline. Similarly, carpooling declined slightly from 11.0 to 9.9 percent while drive-alone mode share increased from 76.7 to 79.7 percent. (2000 journey-to-work data were not yet available at the county level.) These changes are not expected to make a significant difference in the findings from the study. Future investment policies – such as proposed commuter rail to Kenosha or advanced fixed guideway transit in Milwaukee – could stabilize or reverse the decline in public transit ridership. A higher baseline transit mode share would lead to a higher estimated incremental benefit from a specific Commuter Choice policy.

generators of transit trips. However, MCTS and the universities have already implemented an aggressive program, U-PASS, that provides students with an unlimited-use transit pass as part of their tuition and fees. Potential additional student transit ridership is not considered as part of this case study.

Transit Benefits

Existing Programs – Very little information is available from which to estimate existing or potential market penetration of transit benefits programs outside the CBD area. The MCTS benefits programs described previously are available to employers throughout the MCTS service area. However, MCTS believes that at least 90 percent of its participating employers are located in the CBD. Therefore, existing market penetration outside the CBD would be quite low. Taking the previously generated CBD market penetration estimate of about 25,000 employees, this suggests that perhaps 2,000 to 3,000 employees outside the CBD are employed by participating employers, a market penetration of about one percent. Examples were not identified in other peer cities of significant non-CBD employer participation in transit benefits.

Potential Market Penetration – In this analysis, an optimistic scenario is assumed in which businesses with a total of about 20,000 employees (five percent of total market employment) could be convinced to offer a transit subsidy to their employees, while another five percent could offer pre-tax transit benefits. It is likely that the employers offering transit subsidies would be large employers in areas with reasonably good transit service and relatively constrained parking, such as the University of Wisconsin-Milwaukee.

Benefit Assumptions – The levels of transit benefit offered to employees are assumed to be the same as for the Milwaukee CBD market.

Impacts – Figure 2.4 shows VMT reduction as a function of market penetration for the rest of Milwaukee County, as estimated from the Commuter Model. The employer transit subsidies are estimated to result in a reduction of about 0.19 to 0.29 percent of work-trip VMT, depending upon the assumed subsidy level, while the pre-tax benefits result in a reduction of about 0.15 percent, for a total reduction of 0.34 to 0.44 percent. Multiplied by work-trip VMT, this provides an estimated reduction of 24,500 to 31,500 VMT. As such, the magnitude of overall benefits is in the same general range as those generated in the CBD by itself, reflecting the greater efficacy of TDM programs in downtown areas.

Parking Cash-Out

Given the limited ability of planners in other parts of the country to implement parking cash-out in CBD areas, it is considered unlikely that a significant number of businesses in the Milwaukee area (outside the CBD) would participate in a parking cash-out program. In the Minneapolis-St. Paul pilot program, one suburban employer, SuperValu, did offer a $3.00 per day commuter incentive to their employees, achieving a six percent mode shift. However, at 685 employees, this represents a negligible percentage of metro area employment and therefore VMT reduced. In this analysis, therefore, no parking cash-out benefits are assumed for the Milwaukee metro area outside the CBD.

Madison CBD and University Area

The Madison CBD has an estimated 1990 total employment of 25,017, a drive-alone mode share of 50.9 percent, and a transit mode share of 10.8 percent.[6] An additional estimated 19,362 faculty and staff, employed by the University of Wisconsin, are included in the CBD analysis. Madison has an unusually high share of trips by "other" modes, especially walking and bicycling (18.8 percent).

Dane County grew significantly between 1990 and 2000; Census County Business Patterns estimates show an employment growth of 34 percent over this period. Therefore, to calculate the total potential market and benefits of Commuter Choice programs in this analysis, 1990 employment for both the Madison CBD and the rest of Dane County were factored up by this amount. Because it is believed that growth in Madison during the 1990s was disproportionately located outside the CBD/University area, it should be noted that this factoring may overstate actual 2000 CBD employment levels. (The growth in employment for the CBD versus rest of the city/county is not known because CBD-level statistics are only available from the 2000 Census Transportation Planning Package, which has not yet been released.) The estimated 2000 employment for the Madison CBD used in this analysis is therefore 33,406.[7]

Transit Benefits

Existing Programs – Madison Metro offers monthly transit passes, weekday-only commuter passes, and 10-ride ticket booklets to employers on a consignment basis. There are currently 28 employers participating in the program. Madison Metro does not track the terms by which employers distribute fare media to employees, but it is believed that some employers provide transit as a non-taxable transit benefit and that some sell passes to employees, not necessarily on a tax-free basis. Total employment at these 28 sites is unknown, but a number of large employers are included (such as UW Employees, St. Mary's Hospital, and the Department of Health and Human Services). Therefore, existing market penetration is roughly estimated at 24,000 employees or about 45 percent market penetration in the CBD/University area.[8] It is further assumed that 10 percent of these employees receive some level of transit subsidy, while the other 35 percent receive pre-tax benefits.

Potential Market Penetration – Research was conducted on transit benefits market penetration in cities of comparable size to Madison. The cities included in this research were Omaha, Nebraska; Albany, New York; Syracuse, New York; Dayton, Ohio; and Eugene,

---

[6] These mode share figures correspond closely to mode shares at the University of Wisconsin as reported by the UW-Madison TDM Program.

[7] Employment for Milwaukee was not factored in a similar manner because the reported employment growth for Milwaukee County between 1990 and 1999 is only 0.5 percent or 2,400 employees.

[8] As previously discussed, the participation of a few large employers could change this estimate significantly.

Oregon.[9] The number of employers participating in transit benefits programs offered by the local transit agency ranged from 17 in Omaha to 85 in Albany (although the Albany metropolitan area is about twice as large as the Madison metropolitan area). The level of subsidy provided by the transit agency and/or businesses in each city varies. (Details of these programs are provided in Appendix B.)[10]

Information on market penetration in these peer cities, measured by number of employees offered benefits, was not directly available. Since market penetration in the Madison CBD is already assumed to be fairly high, it is assumed for this analysis that an additional 10 percent of employers could offer transit subsidies and 10 percent offer pre-tax benefits, bringing total market penetration to 65 percent. One way of achieving this might be to convince additional state or local government agencies to offer transit benefits to their employees. (According to the Bureau of Labor Statistics, for year 2000 in Dane County as a whole there were 24,000 government employees – 1,500 federal, 17,100 state, and 5,400 local.) Starting in fall 2002, UW-Madison is offering free transit passes to its employees, lending further plausibility to the relatively high estimated levels of existing and potential market penetration assumed for the central Madison area.

Benefit Assumptions – The methodology for estimating the dollar value to the employee of transit benefits is the same as used for the Milwaukee area, but utilizes the value of a monthly transit pass in Madison ($38.50). Transit pass subsidies are estimated to average 50 to 75 percent of this value, or $19.25 to $28.88. The value of a pre-tax transit benefit is estimated at $16.17 per month.

Impacts – The combined incremental work-trip VMT reduction is 0.73 to 0.93 percent, which is in addition to an estimated 1.73 percent VMT reduction from the existing transit pass program. This translates into an additional potential VMT reduction of 5,200 to 6,700 VMT per day.

Note that the impact of a unit of transit benefit is, on a percentage basis, smaller than the impact of the same benefit in the Milwaukee CBD. This is because transit has a lower baseline mode share in Madison, and therefore is observed to be relatively less attractive. While bicycle and walk mode shares are higher in Madison, transit benefits are not expected to increase travel by either of these modes.

---

[9] Boulder, Colorado was also contacted, but information was available only on participation in the Eco Pass program for the entire Denver region, rather than just Boulder.

[10] It is interesting to note that participation in these programs, as measured by the number of employers participating, is larger in *absolute* terms than reported participation in most of the "large" Milwaukee peer cities reviewed in Task 1 of this project. However, information on the actual number of employees offered benefits or using transit is not available, and therefore the effectiveness of transit programs in these medium versus large cities cannot be directly compared using this information.

Parking Cash-Out

Existing Programs – No parking cash-out programs have been implemented in Madison, although a study was conducted of the potential for parking cash-out in the Schenk-Atwood Business District on Madison's near east side. There was insufficient interest by local businesses to justify implementation of the program, and the consultant is now exploring the potential of such a program at the Dane County Building in downtown Madison. Again, no examples were found of parking cash-out programs in other cities similar in size to Madison.

Potential Market Penetration – For purposes of this analysis, it is assumed that employers representing 10 percent of employment in the Madison CBD may be convinced to participate in a parking cash-out program.

Benefit Assumptions – As with the Milwaukee analysis, the value of parking cash-out benefits provided is estimated to be $50 per month.

Impacts – This level of market penetration and benefit yields an estimated VMT reduction of 1.61 percent of CBD work-trip travel, or 9,600 daily VMT.

Combined Parking Cash-Out and Transit Benefits

As for the Milwaukee CBD analysis, it is assumed that businesses providing parking cash-out would be the same businesses that might provide transit benefits. Therefore, the market penetration assumptions under a scenario that includes both programs are 10 percent parking cash-out, 10 percent subsidy, and 45 percent pre-tax benefits. This scenario is shown in Figure 2.7. This combined scenario yields an overall additional benefit of 1.93 percent reduction in work-trip VMT (1.61 from parking cash-out and 0.32 from pre-tax transit benefits), or 13,700 daily VMT. As was found in Milwaukee, even under an optimistic level of market penetration, the overall benefits are relatively modest.

Madison – Rest of Dane County

The remainder of Dane County, outside the Madison CBD and subtracting UW employment, has an estimated 1990 total employment of 171,604, a drive-alone mode share of 70.6 percent, and a transit mode share of 3.4 percent. As for the Madison CBD, employment in the rest of Dane County was factored up by 34 percent to an estimated 229,147 in 2000.

Transit Benefits

Existing Programs – It is not known how many employers that take advantage of Madison Metro's monthly transit pass program are located outside the CBD and University area.

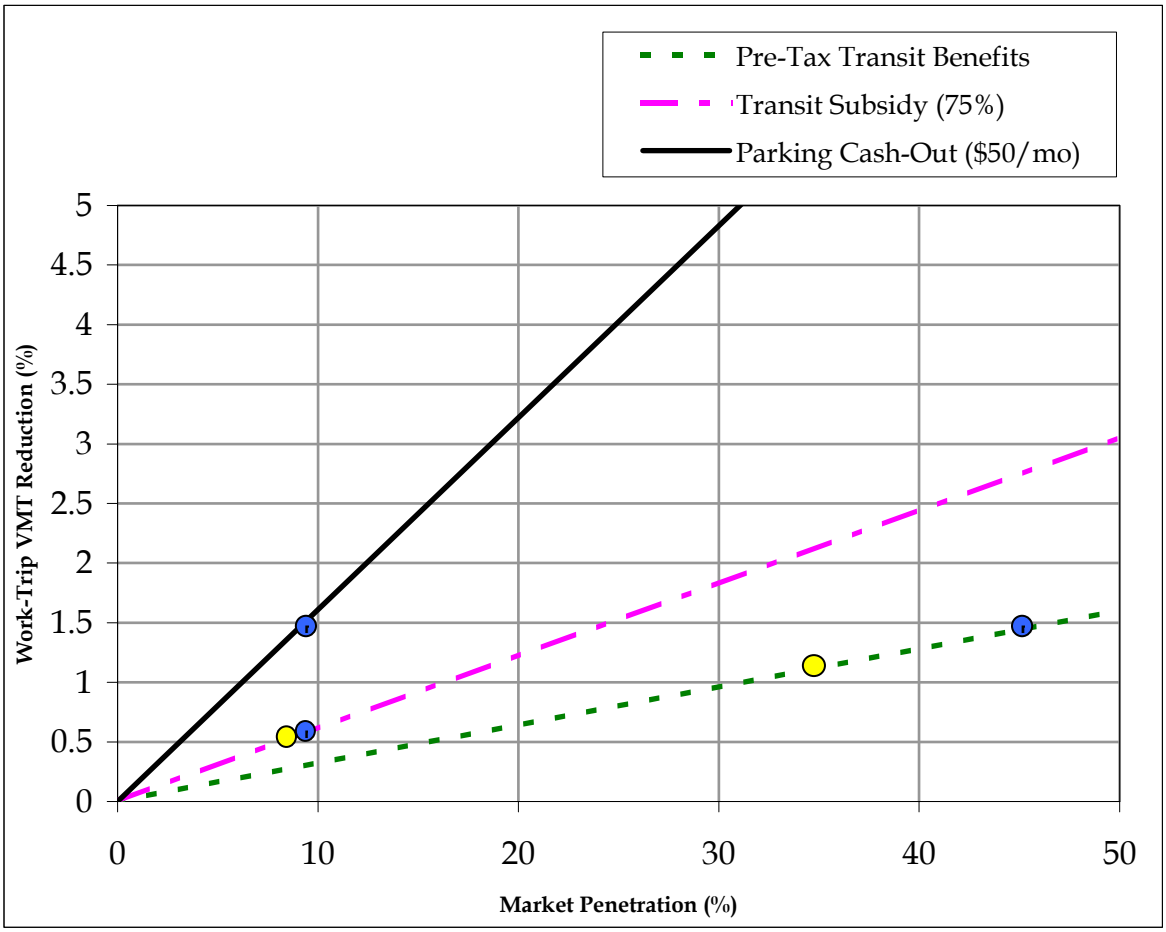
Potential Market Penetration – Again, no information is available from cities of comparable size or geography to Madison from which to estimate the potential market penetration of a transit benefits program. For purposes of this analysis, it is assumed that up to 10 percent market penetration (23,000 employees) could be achieved, perhaps through the

recruitment of a small number of large employers, with half of these employees receiving pre-tax transit benefits and the other half receiving transit subsidies.

Benefit Assumptions – The methodology for estimating the dollar value to the employee of transit benefits is the same as for the Madison CBD.

Impacts – The combined incremental work-trip VMT reduction under this scenario is 0.14 to 0.18 percent, which translates into a VMT reduction of 5,300 to 6,800 VMT per day.

Figure 2.7 Illustration of Benefits for Madison CBD (Combined Scenario)



Parking Cash-Out

Given the limited ability of planners in other parts of the country to implement parking cash-out in CBD areas, and the lack of success with the pilot program in the Schenk-Atwood district of Madison, it is considered unlikely that a parking cash-out program could successfully be implemented outside the Madison CBD and University area. In this analysis, therefore, no parking cash-out benefits are assumed for the "rest of Dane County" market area.

Madison Area Transit Ridership Sensitivity Analysis

A sensitivity analysis was performed to examine the potential impact of higher levels of future transit investment in Madison on these results. Under an "aggressive" transit investment program, Madison ridership is forecast to grow from daily 38,600 riders in 1990 to about 60,000 daily riders in 2020, a growth of 56 percent. This compares with a baseline year 2020 ridership forecast of 41,800, or a growth of eight percent. The increased transit level of service, as reflected through increased ridership, should make the incremental benefits of transit benefit and parking cash-out programs greater.

To estimate the impact of the aggressive transit assumptions, the transit ridership figures were normalized by the population forecasts upon which these ridership forecasts are based. (This is because mode share is most closely related to trips per capita, rather than total trips.) Between 1990 and 2020, population was forecast to grow by 36 percent for Dane County as a whole and 26 percent in the Madison central area. To estimate a 2020 mode share, the percent change in transit trips per capita between 1990 and 2020 was applied to the 1990 baseline mode share. The CBD/University mode share was normalized based on Madison central area population growth, while the "Rest of Dane County" mode share was normalized based on total Dane County population growth. The revised, estimated 2020 mode shares are 13.4 percent for the CBD/University area and 3.9 percent for the rest of Dane County, compared to 10.8 and 3.4 percent, respectively, in 1990. The additional transit mode share was taken out of the drive alone mode share for purposes of the analysis.

The analysis shows that the provision of more extensive transit service does, to some extent, result in a greater impact of the commuter transit incentives. For the Madison CBD, Scenario 1 (maximum transit benefits) yields a VMT reduction of 0.86 to 1.10 percent, or 5,900 to 7,500 VMT per day, compared to 5,200 to 6,700 VMT under the 1990 mode split assumptions. Scenario 2 (transit benefits with parking cash-out) yields a VMT reduction of 2.03 percent or 13,800 daily VMT, compared to 1.93 percent or 13,700 VMT under the 1990 mode split assumptions. (While the *percent* VMT reduction is greater, the *absolute* reduction shows little change because it is starting from a slightly lower baseline.) For the rest of Dane County, under the aggressive transit scenario the VMT reduction is 0.15 to 0.20 percent or 6,000 to 7,700 VMT, compared to 0.13 to 0.17 percent or 5,300 to 6,800 VMT under the 1990 transit mode share scenario.

It should be noted that if the aggressive transit scenario is not implemented, the baseline transit mode share is projected to decline rather than increase (compare the growth in transit trips of eight percent with a population growth of 36 percent). If this were to happen, the impact of the transit benefit and parking cash-out programs on VMT and transit trips would be proportionally smaller. For example, under the baseline 2020 transit ridership, work-trip transit mode share is estimated to decline to 9.3 percent for the CBD/University area and 2.7 percent for the rest of Dane County.

Smaller Cities

The smaller Wisconsin cities analyzed in this effort are characterized by a mode share averaging 80.9 percent drive-alone and 1.6 percent transit. Total employment in these seven cities was about 335,000 as of 1990.

Transit Benefits

Existing Programs – Transit agencies in Racine and Waukesha both distribute transit passes at-cost to employers. Approximately 90 passes are distributed in Racine and 50 in Waukesha. Employment in these two cities totals 46,000 and 39,000, respectively. It is not known whether employers provide these tax-free to employees or subsidize them. The information is also not sufficient to estimate current market penetration (i.e., number of employees with transit benefits available).

Potential Market Penetration – It is assumed that up to 10 percent market penetration (35,000 employees) could be achieved, with half of these employees receiving pre-tax transit benefits and the other half receiving transit subsidies.

Benefit Assumptions – The value of a transit subsidy is estimated at $30, the full value of a monthly transit pass in Racine. The value of pre-tax transit benefits is estimated at $12.60, or 42 percent of a monthly transit pass.

Impacts – The combined incremental work-trip VMT reduction under this scenario is 0.07 percent, which translates into a VMT reduction of 4,200 VMT per day. Note that the response per unit benefit is significantly smaller than in Milwaukee or Madison, because of the low levels of existing transit use (and, by inference, low attractiveness of transit service to choice riders) in these smaller cities. This is to be expected because limited traffic congestion and readily available parking combine to limit the incentives for choice users to travel by transit.

Sensitivity Analysis – Figure 2.5 shows that the provision of transit benefits in the smaller cities is unlikely to have a significant impact on VMT even if more optimistic market penetration rates are assumed. Even a 50 percent market penetration in the offering of transit subsidies, for example, is estimated to reduce VMT by less than one percent.

Parking Cash-Out

Consistent with assumptions for the Milwaukee and Madison suburban employment areas, it is considered unlikely that a parking cash-out program could successfully be implemented in the smaller cities of Wisconsin. In this analysis, therefore, no parking cash-out benefits are assumed for the "smaller cities" market area.

2.4 Overall Impacts

To combine impacts from each of the markets analyzed, two scenarios are evaluated: 1) a scenario in which all of the additional benefits are provided as transit benefits (subsidies and pre-tax); and 2) a scenario in which parking cash-out programs are implemented in the Milwaukee and Madison CBDs. While the total market penetration is the same under each scenario, the scenario with parking cash-out shows larger impacts because the cash-out program is assumed to be more effective at changing behavior than the provision of transit benefits alone. This is because of the larger assumed dollar value of benefit, and also because the financial incentive applies to all alternative modes, not just transit. It should be noted, however, that successful parking cash-out programs have been found to be extremely difficult to establish.

Tables 2.3 and 2.4 summarize the assumed value of benefits and the existing and potential market penetration in each of the five markets analyzed. Table 2.5 summarizes the VMT impacts in each market area, expressed as a percent reduction in work-trip VMT within that market. Table 2.6 shows the total estimated daily VMT impacts for each market area as well as the combined statewide impacts. These impacts are estimated at 60,100 to 72,800 VMT per day under the transit benefits scenario and 88,300 to 96,900 VMT per day under the transit benefits plus parking cash-out scenario (the lower figure assumes a 50 percent average transit subsidy, while the higher figure assumes a 75 percent subsidy).

Table 2.3 Assumed Monthly Value of Benefits to Employees

		$ Value to Employee		
Market Name	Cost of Monthly Transit Pass	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out
Milwaukee CBD	$48.00	$20.16	$24.00 – $36.00	$50.00
Milwaukee rest of county	$48.00	$20.16	$24.00 – $36.00	–
Madison CBD + University	$38.50	$16.17	$19.25 – $28.88	$50.00
Madison rest of county	$38.50	$16.17	$19.25 – $28.88	–
Smaller cities	$30.00	$12.60	$30.00	–

Table 2.4 Assumed Market Penetration

Market Name	Existing			Scenario 1 – Maximum Transit Benefits			Scenario 2 – Transit Benefits Plus Parking Cash-Out		
	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out
Milwaukee CBD	8%	20%	0%	25%	25%	0%	20%	20%	10%
Milwaukee rest of county	0%	0%	0%	5%	5%	0%	5%	5%	0%
Madison CBD + University	35%	10%	0%	45%	20%	0%	45%	10%	10%
Madison rest of county	0%	0%	0%	5%	5%	0%	5%	5%	0%
Smaller cities	0%	0%	0%	5%	5%	0%	5%	5%	0%

Table 2.5 Percent Decrease in VMT

(Percent of Total Work-Trip VMT in Market Area)

Market Name	Scenario 1 – Maximum Transit Benefits				Scenario 2 – Transit Benefits Plus Parking Cash-Out			
	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out	Total	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out	Total
Milwaukee CBD	1.02%	0.37% – 0.56%	0.00%	1.39% – 1.58%	0.72%	0.00%	2.02%	2.74%
Milwaukee rest of county	0.15%	0.19% – 0.29%	0.00%	0.34% – 0.44%	0.15%	0.19% – 0.29%	0.00%	0.34% – 0.44%
Madison CBD + University	0.32%	0.41% – 0.61%	0.00%	0.73% – 0.93%	0.32%	0.00%	1.61%	1.93%
Madison rest of county	0.06%	0.08% – 0.12%	0.00%	0.14% – 0.18%	0.06%	0.08% – 0.12%	0.00%	0.14% – 0.18%
Smaller cities	0.02%	0.05%	0.00%	0.07%	0.02%	0.05%	0.00%	0.07%

Table 2.6 Total Daily Decrease in VMT

Market Name	Scenario 1 – Maximum Transit Benefits				Scenario 2 – Transit Benefits Plus Parking Cash-Out			
	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out	Total	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out	Total
Milwaukee CBD	14,775	5,461 – 8,191	–	20,236 – 22,966	10,429	–	29,495	39,924
Milwaukee rest of county	10,408	14,079 – 21,117	–	24,486 – 31,525	10,408	14,079 – 21,117	–	24,486 – 31,525
Milwaukee County Total	**25,182**	**19,540 – 29,309**	**–**	**44,722 – 54,491**	**20,837**	**14,079 – 21,117**	**29,495**	**64,411 – 71,449**
Madison CBD + University	1,932	2,899 – 4,348	–	5,201 – 6,650	2,302	–	11,430	13,732
Madison rest of county	1,718	3,029 – 4,544	–	5,332 – 6,846	2,302	3,029 – 4,544	–	5,332 – 6,846
Dane County Total	**4,604**	**5,928 – 8,892**	**–**	**10,533 – 13,496**	**4,604**	**3,029 – 4,544**	**11,430**	**19,064 – 20,578**
Smaller cities	1,630	3,205	–	4,836	1,630	3,205	–	4,836
STATEWIDE TOTAL	**31,417**	**28,673 – 41,405**	**–**	**60,090 – 72,823**	**27,072**	**20,313 – 28,866**	**40,925**	**88,310 – 96,863**
Smaller Cities (Detail)								
Eau Claire	88	173	–	262	88	173	–	262
Fond du Lac	52	103	–	156	52	103	–	156
Green Bay	299	588	–	887	299	588	–	887
Janesville	98	192	–	289	98	192	–	289
Kenosha	117	230	–	347	117	230	–	347
La Crosse	180	354	–	535	180	354	–	535
Osh Kosh	124	243	–	366	124	243	–	366
Racine	272	535	–	807	272	535	–	807
Sheboygan	147	289	–	436	147	289	–	436
Superior	27	54	–	81	27	54	–	81
Waukesha	126	247	–	373	126	247	–	373
Wausau	101	198	–	299	101	198	–	299

It should be noted that the impact on VMT, as expressed as a percentage of *overall* VMT in each metropolitan area or city analyzed (including all trip purposes), will be smaller than the percentages shown for work-trip VMT, since work-trip VMT makes up only about one-third of all daily travel, and the trend is declining. Compared to total work-trip VMT

in Milwaukee County, the range of estimated VMT reductions is 0.51 to 0.82 percent, respectively (the lower figure represents transit benefits only at 50 percent subsidy; the higher figure represents transit benefits at 75 percent subsidy plus parking cash-out). Compared to *total* daily Milwaukee County VMT for all purposes, the reductions are estimated at 0.19 to 0.25 percent. In Dane County, the estimated reductions range from 0.22 to 0.42 percent of work-trip VMT and 0.07 to 0.13 percent of total daily VMT. In addition, VMT savings in Milwaukee County will be further diluted when expressed as a fraction of total VMT for the seven-county metropolitan area (0.07 to 0.11 percent).[11] This analysis suggests that even optimistic levels of participation in TDM programs would have relatively minor effects on regional traffic and its impacts.

Table 2.7 shows the estimated impacts on transit ridership under the two scenarios. In Milwaukee County, the expanded commuter benefit programs are estimated to result in an increase in transit ridership of between 2,300 and 3,000 daily riders. In Dane County, the estimated increase is about 640 to 820 riders. In the small cities, the increase is estimated to be about 200 to 250 riders across all cities.

Table 2.7 Change in Transit Ridership

	Scenario 1 – Maximum Transit Benefits				Scenario 2 – Transit Benefits Plus Parking Cash-Out			
Market Name	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out	Total	Pre-Tax Transit Benefits	Transit Subsidy	Parking Cash-Out	Total
Milwaukee County total	1,286	1,008 – 1,511		2,293 – 2,797	1,065	728 – 1,092	856	2,649 – 3,013
Dane County total	280	363 – 544		642 – 824	280	169 – 253	275	723 – 808
Small Cities	82	110 – 164		192 – 246	82	110 – 164		192 – 246

[11] Total work-trip VMT for these calculations are estimated from total employment multiplied by assumed average trip length. Total county-wide VMT is estimated using NPTS data showing that approximately 31 percent of all VMT is work-trip VMT. VMT estimates from the Milwaukee and Madison MPOs were obtained but not used for this calculation because they included only freeway and arterial VMT. The total work-trip VMT estimates using the average trip length methodology were about half of the total VMT estimates provided by the MPOs, which seemed too high. The discrepancy is probably a result of a number of factors, including: 1) local roads not being included in MPO VMT estimates; 2) MPO estimates are from 1990 (Madison) and 1995 (Milwaukee); 3) average trip lengths may be different locally than assumed from national statistics; 4) not every employee commutes every day; and 5) the MPO figure is on-road VMT rather than VMT generated by people working within the county. For the purpose of calculating *percentage* reductions, the VMT estimation method used here provides greater internal consistency even though the total estimated VMT may not be as accurate as MPO estimates.

2.5 Cost Implications

This section discusses the cost implications of new or expanded transit benefits and/or parking cash-out programs. Potential costs are discussed both for public agencies and for businesses. At each level, costs generally fall into two areas: 1) program administration; and 2) the actual transportation benefit subsidies provided.

This section is not intended to provide a "full social cost" accounting whereby all of the benefits and costs of the program are tallied to arrive at an overall benefit/cost ratio. In such an analysis, the costs of subsidizing transportation benefits would be realized as a corresponding financial benefit to the employee, so there would be no net social cost. Although it would be quite small as shown by the results presented above, there would in fact likely be a positive social benefit as people are encouraged to travel by alternative modes, thereby reducing congestion, air pollution, and other social costs associated with travel.

Costs to Public Agencies

Program/Recruitment Costs – These include the costs of staff persons and program activities to recruit companies to participate in transit benefits or parking cash-out programs. Milwaukee County Transit System currently employs approximately 1.5 full-time staff for this purpose. Madison Metro transit has one staff person whose responsibilities include marketing and distributing transit passes. Doubling participating levels would likely require at least a doubling in staff devoted to this effort, and probably more, since it is likely that agencies have already recruited the companies most willing to sign up, and the gains from additional recruitment efforts would diminish. To solicit employer participation in smaller city markets, time commitment could be required from a staff person(s) at WisDOT.

At a cost of roughly $60,000 per full-time staff position (including overhead) devoted to TDM outreach work, as well as expenses for marketing and promotional materials and events, additional program/recruitment costs could be on the order of $200,000 to $300,000 statewide among all participating agencies.

Subsidy Costs – These include the costs of public subsidies to employers to assist in providing transit passes or parking cash-out. Subsidy costs will vary in direct proportion to the number of employees participating in the program, e.g., receiving the transit or parking cash-out benefits. There are at least two types of subsidies that are likely to be applied:

- A transit agency providing transit passes at reduced rates, such as MCTS does to its participating employers. From the transit agency's perspective, this approach may actually *generate* revenue, if the additional ridership generated by the pass program outweighs the loss in revenue per pass. A back-of-the-envelope calculation for MCTS's current transit pass program, which provides annual passes at roughly a 35 percent discount compared to the cost of weekly passes, suggests that expanding this program will result in a net revenue gain for the agency (see sidebar).

- A state-provided tax credit to businesses who provide benefits. The revenue lost to the State through the tax credit will depend on the number of employees receiving the benefits as well as the number of businesses who actually choose to take advantage of the tax credit. If fewer businesses take advantage of the credit (e.g., because they are unaware of it), there will be less revenue loss but the program may also be less effective. In Oregon, a state tax credit for offering commuter benefits was claimed by 26 employers in 2000 at a cost to the State of $334,406, and by 33 employers in 2001 at a cost to the State of $447,005. In Minnesota, 17 employers filed for credit and approximately $200,000 in credit was approved in 2000, the first year of the program in this State. The credit amount is anticipated to double for the 2001 tax year.[12]

[12]Information on the number of employees offered or benefiting from the tax credit was not available in either state.

Estimation of Revenue Impacts to MCTS of Expanded Transit Pass Program

MCTS sells annual passes to businesses at a cost of $400. This represents approximately a $200 subsidy compared to the revenue generated by an employee buying 50 weekly passes a year (at $12/each).

Increasing market penetration for the subsidized pass program from 20 to 25 percent of employees leads to an estimated 419 new transit riders, as determined by the Commuter Model. This provides an incremental revenue gain to MCTS of 419 * $400 = $167,700.

However, the potential costs of new subsidies to additional employees who were already using transit must also be considered. The number of existing transit commuters who benefit from new subsidies under the expanded market penetration is estimated as the number of transit riders (from baseline CBD transit mode share) at the additional businesses reached through expanded market penetration (in this case, five percent of total CBD businesses). This assumes that employees at the companies newly participating in the program were using transit at the same rate as CBD employees on the average, and that transit users were buying weekly passes.

This figure is therefore estimated to be:

86,457 total CBD employees * five percent expanded market penetration * 13.8 percent baseline transit mode share = 597 employees.

At an annual subsidy of $200 per pass, the revenue loss to MCTS is 597 * $200 = $119,300.

The overall net revenue gain to MCTS from expanding the subsidy program is therefore estimated to be $167,700 - $119,300 = $48,400 annually. This figure can be scaled proportionally depending upon the assumed incremental market penetration of the program. While there is considerable uncertainty in this estimate, it does suggest that MCTS could benefit from a revenue standpoint from expansion of the pass subsidy program.

MCTS would show an additional revenue gain from the increased transit ridership induced by expanded pre-tax transit benefits and/or parking cash-out programs. This revenue gain would be equal to the number of new transit riders resulting from these programs times the value of a pass. In the case of Scenario 1, which includes 1,286 additional riders from the expanded pre-tax benefits, the estimated revenue gain to MCTS would be 1,286 * $600 = $772,000 a year. Scenario 2, which includes a total of 1,921 new riders from the pre-tax and parking cash-out strategies, provides an even larger gain of $1.15 million. This calculation suggests that MCTS could place a fairly significant amount of resources into employer recruitment and still benefit from a financial perspective. However, it also assumes that the additional level of market penetration assumed in these scenarios can be achieved, which is not guaranteed.

Estimation of Revenue Impacts to Dane County Transit of Expanded Transit Pass Program

Estimating the revenue benefits of an expanded transit pass program in Madison is simpler than in Milwaukee, since the transit agency does not directly subsidize the passes. Therefore, the revenue benefit is simply the number of new transit riders times the revenue per rider. Assuming an average revenue per rider of $38.50 per month (the cost of a monthly pass) and a 50 percent average subsidy provided by businesses, the increase of 642 to 723 riders (Table 2.7) would result in a revenue gain to the agency of $24,700 to $27,900 per month or about $297,000 to $334,000 per year.

Costs to Businesses

As for costs to public agencies, costs to businesses fall under two general categories: administrative costs and subsidy costs.

Administrative Costs – These include the cost of establishing the program, publicizing the program to employees, distributing transit passes or other benefits, accounting and reporting, etc. Implementing transportation benefits does not necessarily represent a major expense; the U.S. EPA suggests that eight hours a month may typically be required to maintain a Commuter Choice program at a company, which works out to an annualized cost of $2,800,[13] or $140 per year per employee for a mid-size company in which 20 employees take transit. Administrative hassle, however, has been identified as a barrier to more widespread implementation of transportation benefits programs.[14]

Subsidy Costs – The cost to the business of subsidizing transportation benefits will depend on the particular benefit provided, as well as whether the business can in turn be subsidized by the State, transit agency or other public agency. Transit benefit costs will be proportional to the number of employees using transit. The cost to a business of providing a fully subsidized transit pass in Milwaukee County is currently $400 per year per participating employee (including the discount offered to larger businesses by MCTS).

Parking cash-out costs will be on a per-employee basis, since the same benefit is typically provided to all employees. If the business already pays for parking for its employees, however, providing a parking cash-out benefit instead may not add significantly to the

[13] Herzog, Erik, and Michael Grant. *The Commuter Choice Benefits Calculator: A Web-based Tool for Estimating the Costs and Benefits of Commuter Programs.* Submitted for the 81st Annual Meeting of the Transportation Research Board, January 2002. This calculation assumes a national average salary for a human resources specialist of $37,700 and an overhead multiplier of 1.5.

[14] Grant, Michael, Lisa Ecola, and William Schroeer. *Strategies to Increase the Effectiveness of Commuter Choice Programs: Findings from Transportation Agency Interviews*. Submitted for the 81st Annual Meeting of the Transportation Research Board, January 2002.

businesses' costs, since the only additional cost will be that of the benefits provided to non-driving employees. Under some situations, the company may actually save money because they do not need to lease as many parking spaces.

Benefits to Businesses – While the business may incur costs related to the provision of these benefits, it may also benefit from more satisfied employees, which can reduce recruitment and retention costs. Studies suggest that while employee-provided transportation benefits by themselves are not a major factor in the ability to recruit and retain employees, they nonetheless can make a favorable impression, especially in areas where alternatives to driving are attractive to many employees. Companies that place a premium on employees' quality of life often provide good benefits packages with transportation benefits as part of this overall package.[15] Business will also recognize a small financial benefit if they make transit benefits available to employees on a pre-tax basis in lieu of salary, since they will not need to pay the 7.65 percent in FICA taxes on this portion of the benefits provided to employees. In a company where 20 employees take transit and the annual cost of a transit pass is $400, the value of this savings is about $600 a year.

Other Social Benefits

Although the vehicle-trip and VMT reductions brought about by expanded commuter benefits would be relatively minor from a regional standpoint, they may contribute to an incremental improvement in quality-of-life measures. These social and community benefits could include:

- Improved air quality as a result of reduced emissions from automobiles;
- Reduced vehicular traffic through neighborhoods, and associated noise and safety impacts;
- Increased revenue for transit operators, and therefore greater ability to maintain or expand the level and/or quality of transit service; and
- Maintaining or enhancing the attractiveness of the CBD as a place to do business, by expanding employee commute options, reducing the demand/need for parking, and reducing traffic congestion for drivers, carpoolers, and transit users.

While these impacts were not quantified in this study, they will occur roughly in proportion to the VMT and vehicle trip-reduction benefits described above. For example, regional emissions will be reduced by approximately the same percentage amount as VMT is reduced. In general, the benefits will be concentrated most significantly around the CBD and other major employment centers.

An additional effect not quantified in this study is that the provision of a transit pass may encourage transit use even for non-commuting purposes. As a result, some additional VMT-reduction benefits could occur.

[15] *Ibid.*

3.0 Policy Analysis

3.1 Introduction

The discussion of Wisconsin policy options is based on a review of existing programs in the state and of similar strategies in urban areas throughout the United States (see Tasks 1 and 2 Memorandum), as well as the results of 11 interviews with Wisconsin employers. This memorandum includes a summary of policy-related conclusions from those interviews and sets of policy options to:

- Increase participation in existing employer-supported transit programs in particular; and
- Decrease the reliance on single-occupant vehicles (SOV) for commuting purposes in general.

3.2 Employer Interviews

The study team interviewed 11 employers in the Milwaukee and Madison areas, the most likely markets in Wisconsin for major gains in program participation. The companies and agencies were recommended by the Milwaukee County Transit System (MCTS) and Madison Metro. They included both participants in the programs described in Tasks 1 and 2 and employers that the transit agencies feel would be desirable participants. The latter group, then, is part of the target market that the policies discussed in the next section are designed to address.

Findings from those interviews, which are consistent with national experience in strategies to increase transit usage in general and which have a bearing on the development of policies in Wisconsin, are discussed below. Employer statements are highlighted in the margin below.

"Parking is a common concern when employees think about working here. The pass program provides them options."

- **Parking –** Both cost and availability of parking are considered to be among the most important factors motivating employees to participate in the programs – or to use transit at all. Several large downtown Milwaukee companies that participate in the MCTS program charge all employees for parking in company-owned facilities. Typically charges are set at market rates. Another large employer about a mile from Wisconsin Avenue provides free indoor parking for all employees and interest in transit is minimal for this and other reasons. At a large downtown Madison agency, despite the provision of free transit passes, fewer than five percent of employees receive the passes. Monthly parking subsidies are the preferred benefit. In general, parking costs are considered to be greater motivators than transit costs, including the level of transit subsidy.

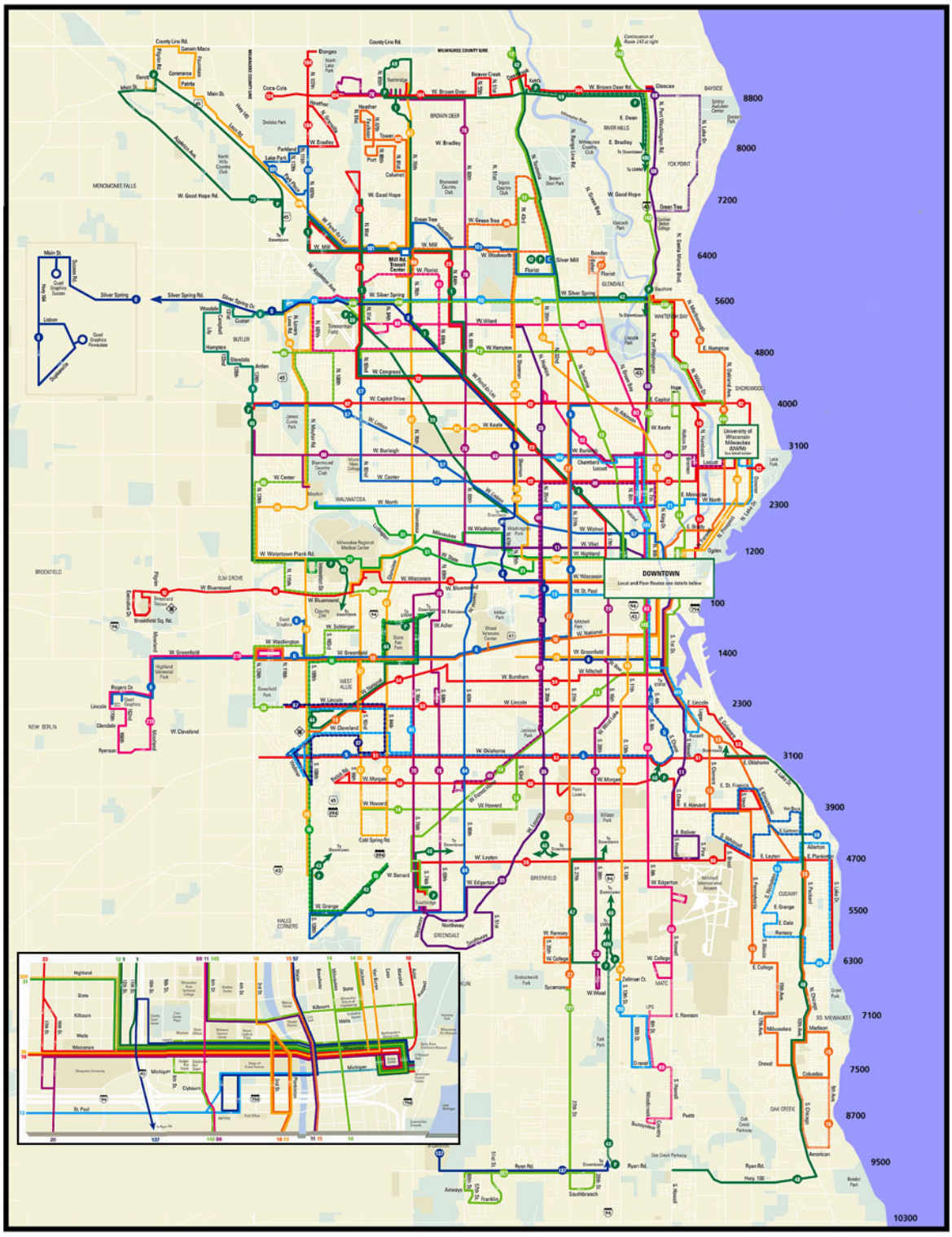
"Transit doesn't extend out to where we will be relocating."

- **Transit Service, Geographic Coverage –** Although there are increasing levels of transit service connecting Milwaukee's central business district (CBD) to Waukesha, Washington and Ozaukee Counties, interviewees still feel that service to non-Milwaukee County locations – home to increasing numbers of their employees – is inadequate. In addition, MCTS's Frequent Flyer service, which primarily serves suburban park-and-ride lots, provides direct service only to the Wisconsin Avenue corridor in Milwaukee's CBD. A downtown Madison employer that currently offers a transit subsidy program believes that its program will be discontinued when the office relocates outside the downtown area in the coming year.

"Nearly all of our employees would have to at least transfer once if they took transit to work."

- **Transit Service, Levels of Service –** Service levels at workplace destinations are considered to be adequate or better in Milwaukee's CBD, especially along or within two blocks of Wisconsin Avenue, which hosts most of the bus lines serving downtown, including Frequent Flyers and express routes. (See Figure 3.1.) Elsewhere, service is seen as inadequate to the point of infeasibility in terms of attracting employees to transit. One employer pointed out that virtually every employee who wanted to use transit would have to transfer at least once. (The need to transfer is one of the major deterrents to transit usage.) In general, transit continues to serve concentrated destinations most effectively, which is true in Milwaukee and Madison, while operators nationwide have found it challenging to provide cost-effective service for virtually any other urban market.

Figure 3.1 MCTS Route Map with CBD Detail in Inset



Source: Milwaukee County Transit System, 2002.

"The program is pretty simple and easy to administer."

- Administrative Hurdles and Financial Costs to the Employer – While there are no foreseen contractual hindrances to establishing transit subsidy programs, parking cash-out is an unlikely option for state agencies – current statutes do not obligate state agencies to provide free parking to their employees and thus many state employees in downtown areas pay for parking. Two potential MCTS participants identified the initial start-up costs of enrolling in a transit subsidy program as the greatest hindrance to their participation. However, none of the participating Milwaukee employers considered the cost of administering and maintaining the programs to be a major problem. While reducing employers' administrative costs could be an additional incentive to increasing program participation – it could help get a firm's attention – doing so would be unlikely to be a deal maker or deal breaker.

"Most of the employees enrolled in the program were already taking transit."

- **Financial Cost to the Employee –** An important general conclusion from the Wisconsin interviews and the review of national transit experience is that the cost of transit for employees, whether subsidized or not, is a relatively unimportant factor influencing decisions regarding program participation specifically and transit usage generally. (Travel demand forecast models generally predict that entirely eliminating fares for transit would increase ridership by only 20 to 25 percent.)

"A TDM program might be a consideration during the Marquette interchange reconstruction."

- **Congestion –** A major factor behind decisions to use transit in many metropolitan areas is congestion. However, interviewees for this study felt that, at present, congestion in the Milwaukee and Madison areas is not a significant motivator to shift many employees to transit or to increase interest in the programs under review. However, several Milwaukee interviewees are apprehensive about the traffic impact of the upcoming reconstruction of the Marquette interchange. This presents a potential opportunity for MCTS and WisDOT to provide new and/or enhanced service that could result in permanent conversions to transit – as was done when I-94 was resurfaced west of the downtown.

"Our organization is moving to a new location where parking will be free and much more available so the parking cash-out option probably wouldn't be that attractive to our employees."

- **Resistance to Parking Cash-Out –** In theory, parking cash-out makes logical sense and empirically has a larger impact on market share than transit subsidies alone (see Tasks 3 and 5 Memorandum). The reality of parking cash-out, however, is that very few find value in its financial incentive relative to the perceived cost of getting to work by a means other than driving alone. Consistent with the national experience, many interviewees were not receptive to initiating such a program. Of those who offer free parking to employees, most said that the little return likely to result from the program did not justify the expected significant administrative effort.

3.3 Policy Options

Originally this study was to conclude with potential policies that would result in reduced reliance on the SOV for work trips by increasing employer and employee participation in employer-subsidized transit programs. However, previous research on a national level and interviews with employers and transit agency officials in Wisconsin suggest that, given the limited impact of such programs without a more extensive and comprehensive SOV-reduction strategy, policy options need to be considered in two categories:

1. What policies would be likely to increase the number of employers and employees who participate in the programs, which alone would be likely to provide only a modest reduction in SOV use?

2. If the actual goal is to reduce SOV use through an increase in transit use in general, what policies – in addition to employer-supported transit passes and tickets – would be likely to effect such an outcome?

Financial or Other Support from WisDOT and/or Other Agencies and Private-Sector Entities for Person-to-Person Marketing

The most effective strategies to bring more employers into the pass/ticket programs involve marketing that is both intensive and targeted. Transit agencies and/or other entities need to invest in the labor-intensive (and therefore expensive) effort of personally contacting employers to explain the benefits of the programs, both to the companies and the community, and to address concerns about potential administrative burdens. While the actual costs of the programs to employers have proven to be low, the benefits are seen to be far from self-evident. A product whose need is not easily perceived has to be aggressively sold.

MCTS, with 1.5 full-time equivalent positions devoted to this type of marketing, is an example of an agency taking such an aggressive stance. MCTS attributes much of the success of its Commuter Value programs to continuous and proactive marketing to employers and employees. As described in the Tasks 3 and 5 Memorandum, the resources spent on increased marketing efforts have the potential to provide a net financial gain to the transit agency, because of increased ridership.

Other marketing activities include obtaining the endorsement of major employers or business leaders, such as a local Chamber of Commerce or business association. Endorsements from "movers and shakers" and their statements on the civic importance of participating (e.g., to reduce congestion) can be more persuasive than similar statements made by public agencies.

From the employees' standpoint, critical barriers to participation include the need for program support features to provide the flexibility and options for days when the standard 8:00 a.m. to 5:00 p.m. schedule will not work. For example, although guaranteed-ride-home (in a

taxi) programs are rarely actually used, the insurance function of their existence increases employee comfort levels. Likewise, providing parking on a predetermined number of days per month provides insurance against the unexpected or unusual. Explaining the importance of such support functions should be part of the intensive marketing campaign.

Besides being intensive, marketing needs to be focused, at least initially, on larger employers to maximize cost-effectiveness and on areas with high levels of transit service, since level of service is one of the most important factors determining transit attractiveness, with or without the pass/ticket programs. (See discussion below.) This effectively means that marketing efforts should be concentrated in and near the CBDs of cities with good transit service. Government agencies in these areas represent especially good candidates for initial promotion.

While aggressive marketing of TDM programs to employers is likely to be the most effective course of action for Wisconsin DOT and transit agencies, other state DOTs, including Washington State and Florida, have developed statewide TDM programs that include the following features in addition to providing marketing and administrative support:

- Integrate TDM with the project planning process by including TDMs in corridor studies and Environmental Impact Statements;
- Conduct cost-effectiveness studies on different TDM programs;
- Assemble a roundtable forum for regional agencies to come together and guide regional TDM programs;
- Train Employee Transportation Coordinators, the persons responsible for administering Commuter Choice, ridesharing, and vanpool programs at major employers;
- Contract with university transportation research centers to establish a TDM clearinghouse and resource center; and
- Publish a TDM handbook for public education purposes.

Support at State and/or Local Levels for Concentrated Development and for Parking Restrictions in CBDs

In terms of costs to employees, probably the most significant is parking. Where parking is scarce, and therefore expensive, and when employers charge for employee parking, use of transit and demand for employer-supported transit programs are likely to increase. Although this can obviously be a challenge politically, land use policies that limit parking availability and increase costs will be effective in increasing pass/ticket program participation. Examples of such policies include reductions in off-street parking requirements for new development (which can be tied to proximity to transit); prohibition on new surface parking in CBD core areas, and plans to develop existing surface parking lots; taxes on parking; and allowances for shared parking in new development. Likewise, persuading employers to develop parking cash-out programs also would be effective, although interviews conducted for this study found little support for such efforts.

It needs to be kept in mind that the ability to implement restrictive parking policies, or sometimes the desirability of doing so, is affected by the economic health of a downtown, especially the health of the commercial market. It is easier and less risky to implement such policies in a thriving CBD where the demand for development is very strong and where the competition for new development from other areas of the region is less robust. This suggests that the opportunities for parking-restrictive policies in major Wisconsin cities may be less attractive and effective than would be the case in such cities as Boston and Chicago.

Financial or Other Support for a Range of Transit Service Enhancements, Including Higher Frequency, Faster Travel, Broader Geographic Coverage and Passenger Amenities

As was noted above, level of service is one of the key factors driving transit usage, and is certainly more significant than cost. Consequently, additional financial and planning support for transit agencies would allow for carefully planned and fiscally feasible service improvements. A critical policy question contrasts costs and benefits of providing better service, i.e., more frequent or faster service on existing routes, with the costs and benefits of geographic expansion of service into unserved markets on the urban periphery. The former approach will probably be more effective, as well as more cost-effective in the shorter run, while the latter strategy could produce benefits over the longer run, especially if part of a broader transit-supportive package of policies.

The range of strategies to make transit more attractive to choice riders is broad, as is the range of costs. For example, strategies that could improve travel times, a critical factor driving ridership improvements, include separate lanes for buses only, now in use on Bluemound Road in Waukesha County and Mineral Point Road in Madison, traffic signal prioritization for transit vehicles, and system plans that minimize the need for transfers. In addition limited-stop express routes are popular among riders because of both the actual time saved over local service and the perceived time saving, which tends to exceed that of the actual time. MCTS provide two types of express service: the Frequent Flyer service linking park-and-ride lots on the periphery with Milwaukee's CBD and the Number 1 express route along Fond du Lac Avenue, which also is served by local Route 23. In addition to faster service, riders also are attracted to more comfortable service. This of course includes the comfort of the vehicles themselves – Dallas has found that over-the-road coaches will pull suburban riders out of their cars – but also encompasses more elaborate waiting shelters, such as Madison Metro's transfer facilities, and passenger information, ranging from the posting of route maps and schedules to variable-message signs telling waiting passengers the actual arrival time of the next bus.

Because of transit's limited ability to effectively serve suburban areas, transit does not represent a viable transportation alternative for a large share of the region's workforce, even those commuting downtown. Therefore, a program that includes enhancements of more flexible services, such as vanpool and ridesharing, could have a greater benefit than a program focused solely on improvements to traditional transit services.

One financial factor that has an important impact on the ability – and probably even greater impact on the willingness – of communities to implement service improvements is the source of local funding. The property tax is considered to be among the least popular sources of local funding for transit. Although supplemented by local option sales taxes in some jurisdictions, property taxes are the primary source of local funding for transit in Wisconsin. These funds are collected as general revenues and allocated to transit among other government programs. In other metropolitan areas in the United States, local option sales taxes, employer payroll taxes, and gasoline taxes have been dedicated to the support of transit services. Although Milwaukee and Madison provide some of the highest levels of transit service in the nation for cities their size, their transit agencies' reliance on funding from local government general revenues makes them vulnerable to year-to-year variations that limit their ability to support long-term capital programs that require sustained funding levels. (See Appendix C on Transit Funding Sources for more information on transit funding sources in peer cities.)

Support of and/or Financial Incentives for Transit-Supportive Land Uses, Especially those that Encourage Major Employers to Locate in Areas with Strong Transit Service, i.e., Central Business Districts

If the broad objective is to decrease SOV use, rather than simply to increase participation in the TDM programs assessed in this study, the focus needs to be on a package of policies, including TDM, that promotes improved transit service levels, promotes the kind of land use that is conducive to transit, and discourages SOV use, especially for work trips. While many of the policies discussed above and below would have some impact in the short term, policies leading to more transit-supportive land uses would arguably have the greatest impact over the longer term. In the end, the existence of high levels of transit service in expanding service areas, in addition to higher costs for SOV use, will be more effective than measures that address only (or mainly) the cost of transit usage itself.

Land use that is densely developed with a fine-grained mix of uses reduces the need for SOV use by allowing people to make shorter trips or chains of trips by alternative modes, such as walking, cycling, or transit. The concentration of origins and destinations allows for the concentration of service that causes people to perceive transit as a serious commuting option, which incidentally increases the attractiveness of employer-supported transit programs. A broad range of policies is available to promote more concentrated development, including:

- Local zoning regulations that permit or encourage denser development, including transit-oriented development;
- State and/or local policies to limit some utility extensions;
- Policies to preserve open space;
- Location of major activity centers near transit;

- Transit-supportive site-design guidelines; and
- Policies to limit rather than expand parking availability in areas served by transit.

While most of these are local issues, state agencies are frequently involved in key decisions, especially when they involve transportation issues and projects.

Appendix A

Selected U.S. Transit Benefit Programs

Table A.1 Selected U.S. Transit Benefit Programs

Location	Program Name	Agencies	Voucher / Fare Media	Agency to Employer Discount	Employer to Employee Discount	Factors Determining Discount	Program Features	Comments
Albuquerque, NM	Alternative Commute Transportation (ACT) Now	City Transit Dept.	FM	Y	Varies	Based on employer profile, site analysis and employee commute needs analysis.	Employers receive free advertising on bus boards for significant employee transit use, automatic Guaranteed Ride Home enrollment for monthly pass users.	
Atlanta, GA	MARTA Partnership	MARTA	FM	Y	Varies	Based on volume of passes purchased.	MARTA will provide marketing materials and go to work site to answer specific questions from employees.	
Austin, TX	Bus Passes	Capitol Metro bus and vanpools	FM	Y	Varies	Discount is set at 50% of pass value.	Capitol Metro will go to work site to meet with senior management to discuss benefits.	
Baltimore, MD	TransitPlus	MTA bus, Central Light Rail, Baltimore Metro subway	FM	N	Varies		Passes are offered on a consignment basis.	
Baltimore, MD	Transit Plus 2000 Voucher	MTA bus, Central Light Rail, Baltimore Metro subway	V	Y	Varies	10% discount for $22 vouchers and above.		
Boston, MA	Commuter Check	Mass. Bay Transit Authority	V	N	Varies		Third party program administration.	Processing fee.
Bremerton, WA	Passes	Kitsap Transit Authority Benefit Area	FM	Y		Agency matches employer contribution.		
Buffalo, NY	Commuter Check	Niagara Frontier Transportation Authority	V	N	Varies		Third party program administration.	Processing fee.

Table A.1 Selected U.S. Transit Benefit Programs (continued)

Location	Program Name	Agencies	Voucher / Fare Media	Agency to Employer Discount	Employer to Employee Discount	Factors Determining Discount	Program Features	Comments
Chicago, IL	Transit Check	CTA, Metra, Pace, NICTD	V	N	Varies		RTA program administration.	Processing fee.
Cleveland, OH	Commuter Advantage	Greater Cleveland Regional Transit Authority	FM	Y	Varies	$0.60 per pass sales commission to employer.	Passes are offered on a consignment basis.	
Columbus, OH	COTA Employer Pass Program	Central Ohio Transit Authority	FM	Y	Varies	Variable band or length of commitment and number of passes.		
Columbus, OH	Commuter Check	Central Ohio Transit Authority	V	N	Varies		Third party program administration.	Processing fee.
Connecticut	Passes	Connecticut Transit in Hartford, New Haven, Stamford	FM	N	Varies		Agency markets services to employees and educates them on available services.	
Dallas, TX	employeE-Pass	DART	FM	Y	Varies	Fixed cost based on location, number of employees. All employees must participate.	Emergency Ride Home, Vanpooling, Carpooling/RideMatch.	
Dallas, TX	Annual Pass	DART	FM	Y			Emergency Ride Home, Vanpooling, Carpooling/RideMatch	
Dallas, TX	Monthly Pass	DART	FM	N	Varies		Emergency Ride Home, Vanpooling, Carpooling/RideMatch.	
Denver, CO	Eco-Pass	Denver Regional Transit Authority	FM	Y	Varies	Fixed cost based on location, number of employees. All employees must participate.	Guaranteed Ride Home.	
Denver, CO	Commuter Check	Denver Regional Transit Authority	V	N	Varies		Third party program administration.	Processing fee.

Table A.1 Selected U.S. Transit Benefit Programs (continued)

Location	Program Name	Agencies	Voucher / Fare Media	Agency to Employer Discount	Employer to Employee Discount	Factors Determining Discount	Program Features	Comments
DesMoines, IA	Employer Support Program	DesMoines Metropolitan Transit Authority	FM	Y	Y	$3/pass discount extended to employer if employees receive pass for free.		
Detroit, MI	TransitChek	SMART	V	N	Varies			Processing fee.
Fort Worth, TX	TransiCheck	Ft. Worth Transportation Authority	V	N	Varies	Agency discounts $2.50/ monthly pass to employee when voucher is used. If employer subsidizes $21 or more, agency will contribute additional $6 discount.		
Fort Worth, TX	E-Pass	Ft. Worth Transportation Authority	FM					
Norfolk / Hampton Roads, VA	Commuter Check	Hampton Road Transit, Bay Transit	V	N	Varies		Third party program administration.	Processing fee.
Honolulu, HI	Employee Subsidized Monthly Bus Pass	Honolulu Public Transit Authority, Oahu Transit Service	FM	N			Passes can be sold on a consignment basis.	
Honolulu, HI	TheBus Bonus Checks	Honolulu Public Transit Authority, Oahu Transit Service	V	N				
Houston, TX	Passes	Metro Transit Authority of Harris	FM	Y		Pass discounts given to monthly orders of 25 or more, complicated discount structure.		
Kansas City, MO	Transit Rider Incentive Plan	KCATA	FM	Y		Agency matches employer contribution of $4/pass.	Guaranteed Ride Home.	

Table A.1 Selected U.S. Transit Benefit Programs (continued)

Location	Program Name	Agencies	Voucher / Fare Media	Agency to Employer Discount	Employer to Employee Discount	Factors Determining Discount	Program Features	Comments
Los Angeles, CA	TransitChek	Various	V	N				Processing fee.
Louisville, KY	Commuter Check	Transit Authority of River City	V	N			Third party program administration.	Processing fee.
Madison, WI	Passes	Madison Metro	FM	N	Varies		Passes are sold on consignment basis.	
Miami, FL	Metro Passes	Miami-Dade transit, light rail, Metro Mover	FM	Y	Varies	Based on number of monthly passes ordered.	Only pass holders can obtain monthly park 'n' ride permits for $5, typically $40.	
Milwaukee, WI	Commuter Value Certificates	Milwaukee County Transit	V	N	Y	Employer may not sell vouchers to employees.		
Milwaukee, WI	Commuter Value Pass	Milwaukee County Transit	FM	Y	Y	Agency extends 20% discount. Employer must subsidize 50% of remaining cost.		
Minneapolis / St. Paul, MN	MetroPass	Various	FM	varies	Varies	Fixed cost based on average system fare and existing transit ridership for revenue neutrality. All employees may participate at fixed employer cost.	Emergency Ride Home.	
Minneapolis / St. Paul, MN	TransitWorks	Various	FM	Y	Varies	Discount of 10% for passes and 5% for stored value card to employers.		
Minneapolis / St. Paul, MN	Commuter Check	Various	V	N	Varies		Third party program administration.	Processing fee.
New Orleans, LA	Employer Subsidized Pass Program	Regional Transit Authority	FM	Y	Varies	Discount applies to quantities of 25 passes or more.	Passes can be sold on a consignment basis.	
New York City, NY	Transit Chek	Various	V	N	Varies		Third party program administration.	Processing fee.

Table A.1 Selected U.S. Transit Benefit Programs (continued)

Location	Program Name	Agencies	Voucher / Fare Media	Agency to Employer Discount	Employer to Employee Discount	Factors Determining Discount	Program Features	Comments
New York City, NY	MetroCard	MTA	FM	N	Varies			Processing fee.
Omaha, NE	Bus Plus	Metropolitan Area Transit	FM					
Philadelphia, PA	TransitChek	Various	V	N	Varies		Third party program administration.	Processing fee.
Phoenix, AZ	Bus Card Plus	Phoenix Public Transit Dept.	FM	N	Varies	Employer is billed for actual rides taken by tracking farecards.		Only for employers of 50+ employees.
Pittsburgh, PA	EZ Gold	Port Authority of Allegheny County	FM	N	N			Only for employers having 20+ participating employees.
Portland, OR	PASSport	Tri-Met Transportation District	FM	Y	Y	Fixed cost based on existing transit ridership, location. All employees must participate. Incentive for employer subsidy of $20/month or more.	Transportation Coordinator training, New Employee kits, Transportation Fairs, Guaranteed Ride Home available.	
Portland, OR	Snap Pass	Tri-Met Transportation District	FM	Y	Y	Incentive for employer subsidy of $20/month or more.	Transportation Coordinator training, New Employee kits, Transportation Fairs, Guaranteed Ride Home available.	
Rhode Island	Commuter Check	Various	V	N	Varies		Third party program administration.	Processing fee.
Sacramento, CA	TransitChek	Sacramento Regional Transit District + Los Angeles transit agencies	V	N	Varies		Third party program administration.	Processing fee.

Table A.1 Selected U.S. Transit Benefit Programs (continued)

Location	Program Name	Agencies	Voucher / Fare Media	Agency to Employer Discount	Employer to Employee Discount	Factors Determining Discount	Program Features	Comments
St. Louis, MO	Employer Pass Subsidy Program	Bi-State Development Agency Bus and MetroLink	FM	N	Varies			
Salt Lake City, UT	Ecology and Economy Pass (ECO Pass)	Utah Transit Authority	FM	Y	Y	Fixed cost based on location, number of employees. All employees must participate.	Guaranteed Ride Home.	
Salt Lake City, UT	Co-Op Transit Pass	Utah Transit Authority	FM	Y	Y	Agency offers 20% discount, employer subsidizes 30%, employee gets pass at half-price.		
San Antonio, TX	Employer Big Pass Program	VIA Metropolitan Transit	FM	N	N		Passes can be sold on a consignment basis.	
San Francisco, CA	Commuter Check	Various	V	N	Varies		Third party program administration.	Processing fee.
Santa Clara, CA	Eco Pass	Santa Clara Valley Transportation Authority	FM	Y	Y	Fixed cost based on location, number of employees. All employees must participate.	Guaranteed Ride Home.	Eco Pass Residential program available for homeowner associations, apartment buildings, etc.
Seattle, WA	Employer Pass Sales Program	Various	FM	N	Varies			
Seattle, WA	FlexPass Program	Various	FM	Y	Y	Discount structure is complicated. The longer a company is involved, the greater the discount.	Home Free Guarantee available, vanpool fare subsidies, carpool incentives.	
Seattle, WA	Commuter Bonus Program	Various	V	N	Varies			
Spokane, WA	Employer Sponsored Pass Program	Spokane Transit Authority	FM	Y	Y	Agency matches employer contribution of $2.50/pass.		

Table A.1 Selected U.S. Transit Benefit Programs (continued)

Location	Program Name	Agencies	Voucher / Fare Media	Agency to Employer Discount	Employer to Employee Discount	Factors Determining Discount	Program Features	Comments
Tacoma, WA	Passes	Pierce Transit	FM	N	Varies		Passes can be sold on a consignment basis.	
Tulsa, OK	Bonus Bucks	Tulsa Transit	V	N	Y	Employer subsidizes 50% of cost.		
Washington DC	Metrochek	Various	FM / V	Y	Varies		Guaranteed Ride Home free on employee enrollment basis.	Voucher is MetroRail farecard, exchangeable for fare media on other systems. Also available as electronic debit to SmarTrip smart card account.

Appendix B

Transit Benefits in Madison, Wisconsin Peer Cities

Transit Benefits in Madison, Wisconsin Peer Cities

City	Metro Area Population (2000)	Program/Benefits Offered	Participation
Omaha, Nebraska	717,000	Employer pass program. Federal employees receive a 100 percent subsidy. Other employers offer between 20 percent to 50 percent subsidy to their employees. Omaha transit does not extend a discount to the employer.	Seventeen employers enrolled, one of which includes a Federal employer. The company sizes range from 100 employees to 7,500 employees (Union Pacific RR).
Albany, New York	876,000	Corporate Swiper Program. There is a 17.5 percent discount off the farebox value when using the swiper pass. Subsidization among the employers varies.	There are 85 employers enrolled in the Corporate Swiper Program. Information on company sizes is unavailable.
Syracuse, New York	732,000	Transit benefit program. No discount to employers from transit agency. Some employers subsidize pass. Most use pretax transit benefit.	Forty-five employers offer a transit benefit program. Usually only one or two people from each employer participate.
Dayton, Ohio	951,000	Employer Support Program offered by Dayton RTA. The passes are sold to the employers at full fare. Some employers subsidize a portion of the employee's pass. There is no data on the extent of employer subsidization.	Thirty-four local businesses are enrolled. Company sizes range from 50 to more than 1,000. Dayton RTA targets employers that are at least 50 employees in size.
Eugene, Oregon	323,000	Group Pass Program. Firms are required to pay $3.00 to $3.50 per person towards an employee's entire transit cost for a month. Under this program, employees do not pay anything. All enrolled organizations are required to provide this benefit for 100 percent of their employees.	The Group Pass Program has 42 employers enrolled, including the university. The smallest allowable company size is 10 and other than the university, the largest employer has 3,500 employees. The program has been very successful.
Madison, Wisconsin	427,000	Madison Metro offers monthly transit passes, weekday-only commuter passes, and 10-ride ticket booklets to employers on a consignment basis. It is believed that some employers provide transit as a non-taxable transit benefit and that some sell passes to employees.	There are currently 28 employers participating in the program. Total employment is unknown, but a number of large employers are included.

Appendix C

Review of Transit Funding Sources

Review of Transit Funding Sources

Cambridge Systematics conducted a review of transit funding sources in 25 cities with the highest levels of transit service per capita in the United States. Cities reviewed were limited to those with populations of less than two million. Madison and Milwaukee rank well in this peer group, with Madison Metro providing the most vehicle revenue-hours of transit service per resident of its service area. The Milwaukee County Transit System ranks seventh in this group and provides approximately twice as much service as the 25th ranked city.[i] Table C.1 lists the 25 cities reviewed.

Table C.1 Selected Peer Cities

State	Generalized Metropolitan Area	Principal Transit Agency	Service Level: Revenue-Hours per 1,000 Population	Year 2000 Capital Expenditure (millions)	Year 2000 Operating Expenditure (millions)
WI	**Madison**	**Madison Metro Transit**	**2.26**	**$6.8**	**$33.2**
WA	Seattle	King County Department of Transportation (Metro)	2.25	$2.2	$24.0
LA	New Orleans	Regional Transit Authority of Orleans & Jefferson	2.22	$21.7	$46.2
TX	Austin	Capital Metro Transportation Authority	2.03	$23.1	$65.8
OR	Portland	Tri-County Metropolitan Transportation District (Tri-Met)	2.02	$26.7	$114.0
SC	Florence	Pee Dee Regional Transportation Authority	2.01	$13.3	$45.2
WI	**Milwaukee**	**Milwaukee County Transit System**	**1.98**	**$7.5**	**$98.5**
HI	Honolulu	City and County of Honolulu	1.82	$5.0	$26.5
WA	Richland	Ben Franklin Transit	1.78	$7.5	$21.2
PA	Pittsburgh	Port Authority of Allegheny County	1.68	$12.8	$50.8
DE	Delaware	Delaware Transit Corporation	1.53	$15.9	$37.6
OH	Cincinnati	Southwest Ohio Regional Transit Authority	1.42	$7.9	$68.3
MI	Flint	Mass Transportation Authority	1.42	$22.6	$48.9
NC	Charlotte	Charlotte Department of Transportation	1.40	$128.5	$227.6
WA	Spokane	Spokane Transit Authority	1.38	$2.5	$21.4
MO	Kansas City	Kansas City Area Transportation Authority	1.36	$104.8	$243.6
AZ	Tucson	City of Tucson (SunTran)	1.35	$1.3	$7.6
TX	San Antonio	San Antonio VIA Metropolitan Transit	1.34	$36.4	$88.8
OH	Dayton	Miami Valley Regional Transit Authority	1.21	$14.6	$93.9
WA	Tacoma	Pierce Transit	1.21	$69.2	$347.6
OR	Eugene-Springfield	Lane Transit District	1.16	$0.1	$14.1
CA	Santa Cruz	Santa Cruz Metro Transit	1.15	$2.2	$33.0
MA	Worcester	Worcester Regional Transit Authority	1.13	$30.0	$53.0
KY	Louisville	Transit Authority of River City (TARC)	1.07	$8.6	$32.9
FL	Fort Lauderdale	Broward County Mass Transit	1.06	$27.4	$124.4

All data derived from 2000 National Transit Database, www.ntdprogram.com.

For each city, the annual capital and operating expenditures of the principal transit provider were reviewed and grouped by funding source. All data were derived from figures reported by transit agencies to the Federal Transit Administration and recorded in the National Transit Database. Figures for the year 2000 were used throughout and because only a single year was reviewed, figures may reflect some irregular or non-recurring expenditures, such as especially high spending on rail transit system construction.

Capital funding sources are summarized in Table C.2. All agencies reviewed derive at least some of their capital funding from federal grant programs, with many agencies at or near the 80 percent maximum federal funding level for formula grant programs for bus purchases. Cities that are constructing rail systems, such as Seattle and Portland, generally provide a larger local match in accordance with the realities of project funding under the federal New Starts program. These larger local matches are frequently funded by dedicated transit funding sources, such as local option sales taxes.

Operating funding sources are summarized in Table C.3. General revenues from state and local governments are the most common sources of funding for operating expenditures in the agencies reviewed, after federal grants and system-generated revenues from fares, advertising, real estate, and other sources.

Because the types of funding available to transit agencies are typically governed by enabling legislation at the state level, a review of dedicated sources of transit funding is presented below for selected states represented by the 25 cities reviewed. Specific information about dedicated transit funding sources is derived from a recent nationwide review of local option transportation taxes by the University of California at Berkeley.[ii] Areas that have created dedicated funding sources for transit are highlighted. In general, dedicated funding sources create a more stable long-term revenue stream that supports more effective long-range financial planning and multi-year capital projects that improve transit service.

California

Transportation sales taxes have been adopted in many areas within California. Santa Cruz imposes a 0.5 percent transit dedicated sales tax which is estimated to generate between $51 to $95 per district resident. Additionally, the State levies a 0.25 percent statewide sales tax for local transit services. In 2000, the combination of these two dedicated funding sources comprised more than half of Santa Cruz Metro Transit's operating funding.

Florida

Florida relies heavily on gasoline taxes for transportation funding. In Broward County, a one cent per gallon county-option gasoline tax is dedicated to transit. A portion of a 10 cent per gallon local option gasoline tax also is used for transit. In 2000, approximately one-third of gasoline tax revenues were used for transit in Broward County. The Broward County Mass Transit Division derived more of its operating funding from dedicated gasoline tax revenues in 2000 (39 percent) than any other source.

Table C.2 Capital Funding Sources

State	Generalized Metropolitan Area	Federal	State		Local					Agency				
		All Sources	General Revenue	Other Sources	General Revenue	Dedicated Income Tax	Dedicated Sales Tax	Dedicated Property Tax	Other Sources	Dedicated Income Tax	Dedicated Sales Tax	Dedicated Payroll Taxes	Other Sources
AZ	Tucson	81%			19%								
CA	Santa Cruz	53%	35%	3%	16%					-7%			
DE	Delaware	20%		80%									
FL	Fort Lauderdale	96%	0%		3%								
HI	Honolulu	80%			20%								
KY	Louisville	82%							18%				
LA	New Orleans	100%											
MA	Worcester	78%	12%		10%				0%				
MI	Flint	79%	21%		0%								
MO	Kansas City	52%			15%		12%		1%				19%
NC	Charlotte	18%	5%		76%				1%				
OH	Cincinnati	67%	4%			29%							
OH	Dayton	83%	4%				13%						
OR	Portland	19%		1%				8%	50%			9%	13%
OR	Eugene-Springfield	81%		2%	17%								
PA	Pittsburgh	67%	10%	17%	1%				1%				5%
SC	Florence	75%		2%					5%				18%
TX	Austin	36%					64%						
TX	San Antonio	80%									20%		
WA	Seattle	54%									46%		
WA	Richland	100%											
WA	Spokane	85%		6%					9%				
WA	Tacoma	59%			19%				22%				
WI	**Madison**	**80%**			**20%**								
WI	**Milwaukee**	**82%**			**18%**								

Table C.3 Operating Funding Sources

State	Generalized Metropolitan Area	Federal	State					Local					Agency				
		All Sources	General Revenue	Dedicated Income Tax	Dedicated Sales Tax	Dedicated Gasoline Tax	Other Sources	General Revenue	Dedicated Income Tax	Dedicated Sales Tax	Dedicated Gasoline Tax	Other Sources	Fares & Other Revenues	Dedicated Sales Tax	Dedicated Property Tax	Dedicated Payroll Tax
AZ	Tucson			12%				68%					20%			
CA	Santa Cruz	3%								22%			40%	35%		
DE	Delaware	3%		77%									20%			
FL	Fort Lauderdale	1%	15%					18%			39%		27%			
HI	Honolulu	17%						57%					26%			
KY	Louisville	15%	0%		1%			0%				67%	17%			
LA	New Orleans	11%	2%							41%		2%	43%			
MA	Worcester	3%	46%					18%					33%			
MI	Flint	9%	43%			0%							28%		19%	
MO	Kansas City	21%	5%					4%		54%			17%			
NC	Charlotte	0%		13%				49%		12%			26%			
OH	Cincinnati	26%	6%			1%			33%				34%			
OH	Dayton	15%	4%										17%	64%		
OR	Portland	10%					1%	0%	1%				30%			58%
OR	Eugene-Springfield	1%	5%				1%						29%			64%
PA	Pittsburgh	8%	27%	31%				9%	0%				25%			
SC	Florence	19%		8%					1%				71%			
TX	Austin												22%	78%		
TX	San Antonio	7%											23%	70%		
WA	Seattle	6%	0%					0%					32%	51%	11%	
WA	Richland				51%		23%						26%			
WA	Spokane	2%	17%				0%					13%	16%	52%		
WA	Tacoma	15%											36%	49%		
WI	**Madison**	**11%**	**44%**					**25%**					**20%**			
WI	**Milwaukee**	**9%**	**44%**					**15%**					**32%**			

Kentucky

Kentucky permits cities or counties to adopt commuter taxes of one percent of business payrolls to fund public transportation and other transportation programs. Commuter taxes derive revenues from all workers in these districts, not just residents. In Louisville, this tax funded 67 percent of transit operations in 2000 and the local match on federal capital grants.

Louisiana

New Orleans has a dedicated sales tax of one percent which generates nearly $100 in annual per capita revenue for transit services. The sales tax revenue comprises more than 40 percent of the Regional Transit Authority's operating funds. Though most of the authority's transit capital funding came from federal sources in 2000, a new hotel tax was recently approved to help pay the local share of a streetcar capital improvements project.

Michigan

The Flint Mass Transportation Authority receives most of its funding from federal grants and state general revenue sources. However, the authority also benefits from a transit dedicated property tax. Flint is one of seven districts in Michigan that has a transit dedicated property tax. The property tax is estimated to generate more than $10 per capita in annual revenues.

Missouri

Transit properties in Kansas City and St. Louis rely heavily on local option sales taxes for capital and operating funding. Kansas City was the first city in Missouri with a dedicated transit sales tax, with a 0.5 percent sales tax enacted in 1971 that is allocated 93 percent to transit and seven percent to road construction. This tax funded more than one-half of the Kansas City Area Transportation Authority's operating budget and a portion of its capital program in 2000. St. Louis makes an even greater use of the local option sales tax for transit. In 1994, voters in St. Louis City and St. Louis County supplemented a 0.5 percent sales tax dedicated to transit services with a 0.25 percent sales tax to fund the operating costs and future extensions of the region's MetroLink light rail system.

North Carolina

The Charlotte Area Transit System derives approximately one-half of its operating funding from local general revenues. In 1998, voters in Mecklenburg County approved a 0.5 percent sales tax to fund public transportation, specifically the development of a regional fixed guideway transit system. This funding source provided 12 percent of the Charlotte transit system's operating funding in 2000. The transit agency also receives a small share of its capital funding from dedicated vehicle registration fees.

Ohio

The Southwest Ohio Regional Transportation Authority collects a dedicated 0.3 percent income tax in the city of Cincinnati to fund nearly one-third of its capital and operating programs. The Miami Valley Regional Transportation Authority, which provides transit service in the Dayton area, collected 64 percent of its operating funding from a dedicated transit sales tax. Sales tax revenues area also used to fund a portion of the local match for its federal capital grants.

Oregon

Transit agencies in Portland and Eugene-Springfield rely on transit district excise taxes levied on employer payrolls to fund a large share of their operating expenses. The current tax rates are approximately 0.6 percent of payroll. The Oregon Department of Revenue collects the tax for the Tri-County Metropolitan Transportation District (Tri-Met) in Portland and the Lane County Mass Transit District (LTD) in Eugene-Springfield. In 2000, these transit agencies derived more than one-half of their operating funding from employer payroll taxes. Tri-Met uses part of the revenue from its payroll tax and the revenue from a dedicated transit property tax to fund capital investments in its light rail system.

Pennsylvania

The Port Authority of Allegheny County in Pittsburgh received most of its capital funding from federal and state funding sources. Pittsburgh benefits from a one percent income tax that supported more than 30 percent of the authority's operating budget in 2000. Local capital and operating funds come primarily from local general revenues with small contributions from other local sources.

Texas

Public transportation represents the largest transportation use of sales tax revenues in Texas. Transit authorities in eight of the State's largest cities have adopted sales taxes to fund public transportation operations and, in Dallas and Houston, major transit capital projects, such as light rail. Capital Metro in Austin collects a one percent sales tax that funded 78 percent of its operating budget and 64 percent of its capital budget in 2000. VIA Transit in San Antonio collects a 0.5 percent sales tax that funded 70 percent of its operating budget and its entire local match on federal capital grants in 2000.

Washington

Washington State is noteworthy for the variety of taxes that are applied to public transportation. Dedicated sales taxes fund approximately one-half of the operating budgets of

King County Metro in Seattle, Ben Franklin Transit in Richland, Spokane Transit, and Pierce Transit in Tacoma. A portion of the Seattle area's one percent sales tax in 2000 funded 46 percent of King County Metro's capital expenditures. Other sources of funding applied to transit include flat vehicle registration fees throughout the Puget Sound region and in other cities. The Puget Sound Regional Transportation Authority (Sound Transit), including Seattle and Tacoma, also levies a 0.3 percent excise tax on private motor vehicles and 0.8 percent excise tax on vehicle rentals. A number of municipalities assess employer head taxes of $2 per employee per month to fund high-capacity transit investments, such as HOV lanes and rail transit.

Wisconsin

Milwaukee and Madison provide some of the highest levels of transit services in the country for cities of similar size, despite the lack of a dedicated funding source. In contrast to many of the states described above, Wisconsin funds transit primarily through the general revenues of state and local government. State operating assistance is derived primarily from motor fuel taxes and vehicle registration fees paid into the transportation fund. At the local level, the majority of general revenue is derived from property taxes, although this is supplemented in some jurisdictions by a local option sales tax. Although state funding levels for transit operating assistance steadily increased during the last decade, general revenue funding sources are vulnerable to significant variations from year to year as the relative needs of a multitude of state and local government programs change. The uncertainty associated with year-to-year funding levels makes it difficult for transit agencies to embark on multi-year programs that require sustained funding levels, such as major transit capital investments, including rail and enhanced bus services.

Conclusions

While the presence of dedicated funding sources for transit is not a prerequisite for high-quality transit service, given Wisconsin transit agencies' high rankings among peer systems, many of the better transit agencies in the nation enjoy funding sources that are isolated from the uncertainties of general government budget pressures. Beyond the issue of dedication of funding sources, it is clear from this national review that agencies derive revenues from a much broader variety of sources than the property tax on which Wisconsin relies for transit funding. This remains a relatively unpopular way of paying for public services, in part because its burden often has little relation to the ability to pay of the household and its administration requires a property value assessment system that is sometimes perceived as arbitrary. There is an opportunity to explore the feasibility of introducing alternative forms of taxation to support rail and enhanced bus transit systems in Wisconsin's largest cities.

Endnotes

i Federal Transit Administration. "2000 National Transit Database: Data Tables for Individual Transit Agency Statistics," Tables 1 to 9. http://www.ntdprogram.com/NTD/NTDData.nsf/Docs/2000CompleteDataTables/$File/DataTable00.pdf.

ii Goldman, Todd, Sam Corbett and Martin Wachs. Local Option Transportation Taxes in the United States. University of California at Berkeley: Institute of Transportation Studies, March 2001. http://www.its.berkeley.edu/publications/localoptiontax/localoptiontaxmain.html.